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THE

# EDIBLE AND GAME BIRDS

OF

# BRITISH INDIA

## WITH ITS DEPENDENCIES AND CEYLON.

WITH

WOODCUTS, LITHOGRAPHS, AND COLOURED ILLUSTRATIONS.

BY

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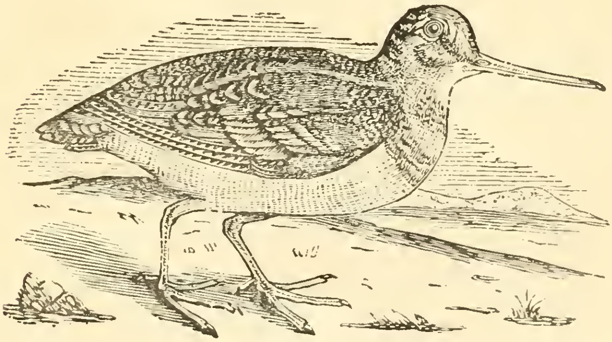

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1889.

# PREFACE.

THE publication of this work is a fulfilment of the promise held out in the August (1887) number of the *Indian Annals and Mazagine of Natural Science* (a monthly periodical then conducted by me for the Victoria Natural History Institute) to issue a series of works on the Fauna and Flora of the various Presidencies and Provinces in India. It is the second of the series, and has, owing to the subject falling within the limits of the Avifauna of India, and to the similarity of the labour involved in completing the larger work, taken the place of what was begun in the Annals, *viz.*, "The Reptiles of Western India, including Sind," which awaits further materials. It was only at the repeated requests of a number of subscribers to my "Avifauna of British India," as well as of sportsmen and others, that the additional labour was undertaken, it having been shown that volumes of 1,000 and more pages would be an encumbrance to them in their Shikar travels, which now, from the southernmost point of India to the "Abode of Snow," by rail and other facilities, is a pleasure trip of but a few days. At the same time the book furnishes all the necessary information in regard to the "Close season" for Game Birds, and by its study would prevent any infringement of the Game Laws; and also afford information as to what substitutes could be had during the breeding season of certain species. In these respects it would be a manual for all District Officers. It is not intended that it should supersede or render unnecessary other valuable and costly illustrated works on a larger scale, but on the contrary

M18250 Birds Quaritch /N46

extend their usefulness by rendering their purpose, in a less expanded form, available to that numerous class of enquirers, adventurers and sportsmen whose incomes are much affected by the rate of exchange; also to even District Officers and those Indian Princes and Chiefs who are ever seeking hunting or sporting grounds in newly opened-up regions, as a pocket guide, in the hope that they will find it not altogether unworthy of their kind patronage.

It will be found not without some valuable characteristics of its own which is not comprised in its predecessors. First, is the detailed description of each species and of their nests and eggs; next its more recent information, and in generally giving—after the accessions of country during the past six years—the additions to the Game fauna of those new regions; again the important Breeding Calendar and table of the distribution of each species; and lastly, the condensed abridgements of the more elaborate writings of many acknowledged authorities (all essential details being added), as it seemed indispensable that there should be an exclusion of all lengthy repetitive disquisitions, notes and notices which form the bulk of the works now extant.

Of the 245 birds described in this work, 133 only have been hitherto classed as Game Birds. These are represented as under:—

| | | | |
|---|---|---|---|
| Pteroclidæ | 8 | Perdicinæ | 34 |
| Pavoninæ | 4 | Scolopacidæ | 7 |
| Megapodidæ | 1 | Rallinæ | 8 |
| Gallinæ | 6 | Parridæ | 3 |
| Otitidæ | 6 | Cygnidæ | 1 |
| Phasianinæ | 16 | Anseridæ | 5 |
| Gruidæ | 4 | Anatidæ | 30 |

Of this number 49 only are known to breed within our limits from the month of February to about the third week of August, during which period there are not less than 76 other edible birds which form excellent substitutes. Chief among these latter are the *Treronidæ* and *Columbidæ* or the families of Pigeons, also the Buntings and Doves, besides a few of the Charadrinæ, which breed in India and Ceylon, and are found the whole year round. After the third week of August, besides the "Game" which up to then were prohibitive, multifarious hosts of Waders and Swimmers are added to the list of birds sought for by all sportsmen, for which with doubtful footsteps it is necessary to tramp through reeds and rushes and amidst oozing mud and stagnant pools. These are the Herons, Snipe, Curlews, Geese, Ducks, Stone and Sand Plovers, Stints, Quails, Coots, Buntings, Godwits &c., of which there are numerous species and vast numbers of individuals of each, chiefly migrants which winter in India, leaving again at tolerably fixed periods during the months of March, April and May. During winter, wherever suitable situations are found, as marshes, mudbanks, channels and lakes, or dhunds, formed either by the inundation of a river or by rain, these places literally teem with Waders and Swimmers. There is abundance of shooting at this period, and in some places, as the Munchur Lake in Sind, wild fowl literally swarm in such large masses, that when disturbed, they form quite a feathered cloud in the air. And this the sportsman may enjoy for fully 8 months in the year.

It is much to be regretted that the Avifauna of Cashmere has not been as fully worked out as either Afghanistan or Persia. An attempt has been made to give the distribution of the Game Birds in Cashmere; the information is, however,

very meagre, and as far as possible only those species have been added of whose occurrence the facts have been well ascertained from the works of standard authors. In compiling the distribution table, many of the most celebrated standard Zoological works have been consulted, and accurate information has been culled from all. The names of Blyth, Jerdon, Hume, Marshall, Blanford, Gould, Sharpe, and Oates, are among the many from whom these pages have been enriched, and to whom these remarks apply. I must not however omit to mention here the sterling service of Naturalist-collectors, who have aided much in making the book full of more recent information in regard to the breeding of species, and their habits and occurrence in the stations they are placed in. Among many are Mr. Mahon Daly, of the Shevaroy Hills; Mr. P. W. Mackinnon of Mussoorie; Mr. Charles Wilkinson of Darjeeling; Mr. W. Beckwith in the Sikkim Terai; Mr. A. G. Cardew of Ootacamund; Mr. H. Parker and Mr. F. B. Armstrong of Ceylon; Mr. J. A. Cave Browne of Rangomati in the Chittagong Hill Tracts; Mr. Ellison of Rangoon; and Mr. C. Wyeth of Tavoy.

The illustrations in the work have been taken chiefly from my "Vertebrate Zoology of Sind." A few of the later woodcuts are from other sources, with certain necessary alterations and additions to meet their scientific descriptions. These last, together with the coloured plates, including the heads of Grouse taken from Mr. Hume's works, were executed under the supervision of the Education Society's Press.

JAMES A. MURRAY.

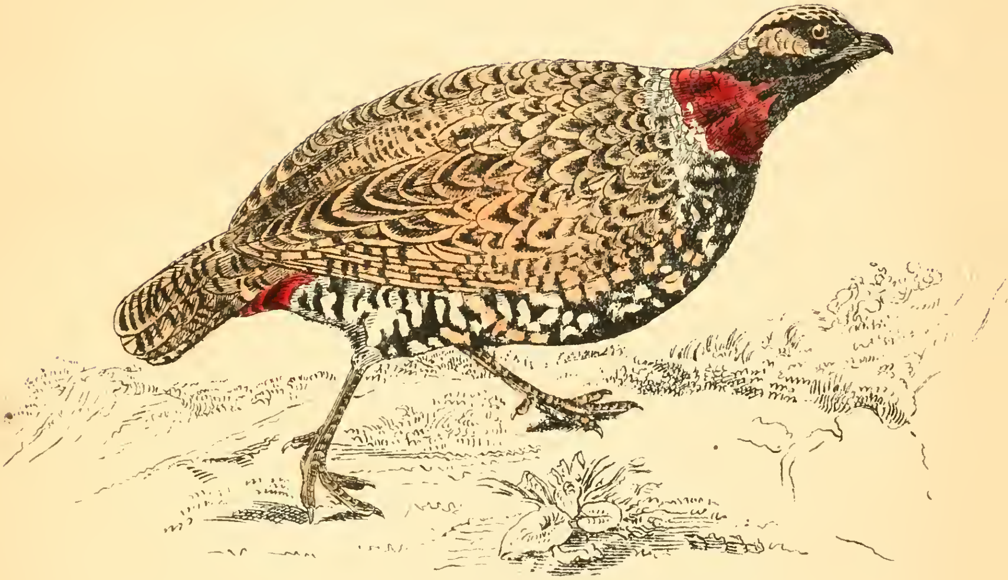
*Ripon Road*, *Byculla*, *Bombay*,
6*th December* 1889.

# LIST OF ILLUSTRATIONS.


| | | | PAGE |
|---|---|---|---|
| 1. | Francolinus vulgaris ... ... ... ... ... | (*Plate*) | |
| 2. | Diagram showing the different parts of Birds ... | ,, ... | 1 |
| 3. | Sturnus vulgaris ... ... .. ... ... | (*Woodcut*) ... | 13 |
| 4. | Pastor roseus ... ... ... ... ... ... | ,, ... | 14 |
| 5. | Palumbus casiotis ... ... ... ... ... | ,, ... | 25 |
| 6. | Columba livia ... ... ... ... ... ... | ,, ... | 28 |
| 7. | Turtur risorius ... ... ... ... ... | (*Plate*) ... | 34 |
| 8. | Heads of Pterocles coronatus, senegallus, exustus, alchata, Lichtensteini and fasciatus ... ... | ,, ... | 45 |
| 9. | Pterocles arenarius (Male) ... ... ... ... | ,, ... | 40 |
| 10. | ,, (Female) ... ... ... | ,, ... | 43 |
| 11. | Head of Crossoptilon thibetanum ... ... ... | (*Woodcut*) ... | 53 |
| 12. | ,, Ceriornis satyra ... ... ... ... | ,, ... | 55 |
| 13. | ,, Ithaginis cruentus ... ... ... ... | ,, ... | 57 |
| 14. | ,, Pucrasia macrolopha ... ... ... | ,, ... | 58 |
| 15. | ,, *Polyplectron Hardwickii ... ... ... | ,, ... | 59 |
| 16. | ,, Lerwa nivicola ... ... ... ... | ,, ... | 71 |
| 17. | ,, Coturnix communis ... ... ... | (*Plate*) ... | 87 |
| 18. | Otis tarda ... ... ... ... ... ... | (*Woodcut*) .. | 95 |
| 19. | Charadrius pluvialis ... ... ... ... ... | ,, ... | 105 |
| 20. | Vanellus cristatus ... ... ... ... ... | ,, ... | 110 |
| 21. | Œdicnemus crepitans ... ... ... ... | ,, ... | 114 |
| 22. | Strepsilas interpres ... ... ... ... ... | ,, ... | 115 |
| 23. | Grus cinerea ... ... ... ... ... ... | ,, ... | 116 |
| 24. | Scolopax rusticola ... ... ... ... ... | ,, ... | 122 |
| 25. | Gallinago scolopacina ... ... ... ... | ,, ... | 125 |
| 26. | ,, gallinula ... ... ... ... ... | ,, ... | 126 |
| 27. | Head of Phalaropus fulicarius ... ... ... | ,, ... | 137 |
| 28. | Limosa lapponica ... ... ... ... ... | ,, ... | 146 |
| 29. | Numenius arquatus ... ... ... .. ... | ,, ... | 149 |
| 30. | Porphyrio poliocephalus ... ... ... ... | ,, ... | 154 |
| 31. | Head of Fulica atra ... ... ... ... ... | ,, ... | 155 |
| 32. | Gallinula chloropus .. ... ... ... ... | ,, ... | 163 |
| 33. | Ardea cinerea ... ... ... ... ... ... | ,, ... | 168 |
| 34. | Cygnus olor ... ... ... ... ... ... | ,, ... | 170 |


* Wrongly Phasianus, under figure.

| | | | |
|---|---|---|---|
| | | | PAGE |
| 35. | Anser albifrons | (*Woodcut*) | 173 |
| 36. | Tadorna cornuta | ,, | 180 |
| 37. | Spatula clypeata | ,, | 181 |
| 38. | Anas boscas | ,, | 183 |
| 39. | Chaulelasmus streperus | ,, | 185 |
| 40. | Dafila acuta | ,, | 188 |
| 41. | Mareca penelope | ,, | 190 |
| 42. | Querquedula circia | ,, | 192 |
| 43. | Querquedula formosa | ,, | 193 |
| 44. | Fuligula cristata | ,, | 197 |
| 45. | Fuligula marila | ,, | 198 |
| 46. | Fuligula ferina | ,, | 199 |
| 47. | Clangula glaucion | ,, | 201 |
| 48. | Mergus merganser | ,, | 205 |



FRANCOLINUS VULGARIS.

# Table of Contents and Breeding Calendar.


| | PAGE | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ORDER—PASSERIFORMES.** | | | | | | | | | | | | | |
| **Section—FRINGILLIFORMES.** | | | | | | | | | | | | | |
| **Family—FRINGILLIDÆ.** | | | | | | | | | | | | | |
| **Sub-Family—EMBERIZINÆ.** | | | | | | | | | | | | | |
| Gen. **Emberiza.** | | | | | | | | | | | | | |
| 1. schœniclus *Linn.* | 2 | Do not breed on the plains of India; arrive about the middle of July or begining of August, and stay till October and November. | | | | | | | | | | | |
| 2. pusilla, *Pall.* | 2 | | | | | | | | | | | | |
| 3. fucata, *Pall.* | 3 | | | | | | | | | | | | |
| 4. melanocephala, *Scop.* | 4 | | | | | | | | | | | | |
| 5. luteola, *Sparrm.* | 5 | | | | | | | | | | | | |
| 6. aureola, *Pall.* | 6 | | | | | | | | | | | | |
| 7. rutila, *Pall.* | 7 | | | | | | | | | | | | |
| 8. spodocephala, *Pall.* | 8 | | | | | | | | | | | | |
| 9. Buchanani, *Blyth* | 8 | | | | | | | | | | | | |
| 10. Stracheyi, *Moore* | 9 | | | | | | | | | | | | |
| 11. Stewarti, *Blyth.* | 9 | | | | | | | | | | | | |
| 12. leucocephala, *Gm.* | 10 | | | | | | | | | | | | |
| Gen. **Galerida.** | | | | | | | | | | | | | |
| 13. cristata, *Linn.* | 11 | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... |
| **Family—STURNIDÆ.** | | | | | | | | | | | | | |
| **Sub-Family—STURNINÆ.** | | | | | | | | | | | | | |
| Gen. **Sturnus.** | | | | | | | | | | | | | |
| 14. vulgaris, *Linn.* | 13 | Do not breed in India, but arrive during September. | | | | | | | | | | | |
| Gen. **Pastor.** | | | | | | | | | | | | | |
| 15. roseus, *Linn.* | 14 | | | | | | | | | | | | |
| **ORDER—GEMITORES.** | | | | | | | | | | | | | |
| **Family—TRERONIDÆ.** | | | | | | | | | | | | | |
| Gen. **Treron.** | | | | | | | | | | | | | |
| 16. nipalensis, *Hodgs.* | 16 | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Crocopus.** | | | | | | | | | | | | | |
| 17. phœnicopterus, *Lath.* | 16 | ... | ... | × | × | × | × | ... | ... | ... | ... | ... | ... |
| 18. chlorigaster, *Blyth.* | 16 | ... | ... | × | × | × | × | ... | ... | ... | ... | ... | ... |
| 19. viridifrons, *Blyth.* | 17 | ... | | × | × | × | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Osmotreron.** | | | | | | | | | | | | | |
| 20. bicincta, *Jerd.* | 18 | ... | ... | ... | × | × | × | ... | ... | ... | ... | ... | ... |
| 21. vernans, *Linn.* | 18 | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... | ... |
| 22. malabarica, *Jerd.* | 19 | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... | ... |
| 23. Phayrii, *Blyth.* | 19 | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... |
| 24. fulvicollis, *Wagl.* | 20 | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... |
| 25. pompadoura, *Gmel* | 20 | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... |

| | PAGE | January. | February. | March. | April. | May. | June. | July. | August | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Breeding Calendar. | | | | | | | | | | | |
| Gen. **Sphenocercus.** | | | | | | | | | | | | | |
| 26. sphenurus, *Vigors.* | 21 | ... | ... | ... | × | × | × | ... | ... | ... | ... | ... | ... |
| 27. apicaudus, *Hodgs.* | 21 | ... | ... | ... | × | ... | .. | ... | ... | ... | ... | ... | ... |
| Sub-Family—CARPOPHAGINÆ. | | | | | | | | | | | | | |
| Gen. **Carpophaga.** | | | | | | | | | | | | | |
| 28. ænea, *Linn.* | 22 | ... | ... | ... | × | × | × | ... | .. | ... | ... | ... | ... |
| 29. insignis, *Hodgs.* | 23 | . | ... | ... | ... | × | × | × | ... | ... | ... | ... | ... |
| 30. griseicapilla, *Wald.* | 23 | × | × | ... | ... | ... | .. | ... | ... | .. | ... | ... | ... |
| 31. bicolor, *Scop.* | 23 | ... | × | × | × | ... | ... | ... | ... | ... | .. | ... | ... |
| Family—COLUMBIDÆ. | | | | | | | | | | | | | |
| Sub-Family—PALUMBINÆ. | | | | | | | | | | | | | |
| Gen. **Palumbus.** | | | | | | | | | | | | | |
| 32. pulchricollis, *Hodgs.* | 25 | ... | ... | ... | ? | ? | ... | ... | .. | ... | ... | ... | ... |
| 33. casiotis, *Bonap.* | 25 | ... | ... | ... | ... | × | ... | .. | ... | ... | ... | ... | ... |
| 34. Elphinstonei, *Sykes.* | 26 | ... | .. | × | × | × | × | ... | ... | ... | ... | ... | ... |
| Gen. **Palumbæna.** | | | | | | | | | | | | | |
| 35. Eversmanni, *Bp.* | 26 | ... | ... | ... | × | × | × | ... | ... | ... | ... | ... | ... |
| Gen. **Columba.** | | | | | | | | | | | | | |
| 36. intermedia, *Strickl.* | 27 | × | × | × | ... | ... | . | ... | ... | .. | ... | × | ... |
| 37. livia, *Bp.* | 27 | × | × | × | ... | ... | ... | ... | ... | ... | ... | × | ... |
| 38. rupestris, *Pall.* | 28 | × | × | × | ... | ... | ... | ... | ... | ... | . | × | ... |
| 39. leuconota, *Vigors.* | 29 | × | × | × | ... | ... | ... | ... | . | ... | ... | × | ... |
| Gen. **Alsocomus.** | | | | | | | | | | | | | |
| 40. puniceus, *Tickell.* | 29 | ... | ... | ? | ... | | .. | ... | ... | ... | ... | ... | ... |
| 41. Hodgsoni, *Vigors.* | 29 | ... | .. | ... | × | × | ... | ... | ... | ... | ... | .. | ... |
| Sub-Family—MACROPYGIINÆ. | | | | | | | | | | | | | |
| Gen. **Macropygia.** | | | | | | | | | | | | | |
| 42. leptogrammica, *Tem.* | 30 | ... | .. | ... | ... | × | × | ... | ... | ... | ... | ... | ... |
| 43. assimilis, *Hume.* | 31 | ... | ... | ... | ... | × | × | ... | ... | ... | .. | ... | ... |
| Sub-Family—TURTURINÆ. | | | | | | | | | | | | | |
| Gen. **Turtur.** | | | | | | | | | | | | | |
| 44. pulchratus, *Hodgs.* | 32 | ... | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... |
| 45. meena, *Sykes.* | 32 | × | × | × | × | ... | ... | ... | ... | ... | ... | ... | × |
| 46. senegalensis, *Linn.* | 33 | ... | .. | × | × | ... | ... | ... | ... | ... | ... | ... | ... |
| 47. suratensis, *Gm.* | 34 | ... | .. | ... | × | × | ... | . | ... | ... | ... | ... | ... |
| 48. tigrinus, *Tem.* | 34 | ... | ... | × | × | × | × | × | × | ... | ... | ... | ... |
| 49. risorius, *Linn.* | 35 | ... | ... | × | × | × | × | × | × | ... | ... | ... | ... |
| 50. humilis, *Tem.* | 36 | ... | ... | × | × | × | × | × | × | ... | ... | ... | ... |

| | PAGE | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Breeding Calendar. | | | | | | | | | | | |
| **Family—GOURIDÆ.** | | | | | | | | | | | | | |
| **Sub-Family—PHAPIDINÆ.** | | | | | | | | | | | | | |
| Gen. **Chalcophaps.** | | | | | | | | | | | | | |
| 51. indica, *Linn.* | 37 | ... | ... | × | × | × | × | × | ... | ... | ... | ... | ... |
| Gen. **Geopelia.** | | | | | | | | | | | | | |
| 52. striata, *Linn.* | 37 | ... | ... | ... | ... | ? | ... | ... | ... | ... | ... | ... | ... |
| **Sub-Family—CALŒNINÆ.** | | | | | | | | | | | | | |
| Gen. **Calœnas.** | | | | | | | | | | | | | |
| 53. nicobarica, *Linn.* | 38 | ... | ... | ... | .. | × | × | ... | ... | ... | ... | ... | ... |
| **ORDER—RASORES.** | | | | | | | | | | | | | |
| **Family—PTEROCLIDÆ.** | | | | | | | | | | | | | |
| Gen. **Pterocles.** | | | | | | | | | | | | | |
| 54. coronatus, *Licht.* | 40 | ... | Does not breed in India. | | | | | | | | | | |
| 55. senegallus, *Linn.* | 42 | ... | Do. do. | | | | | | | | | | |
| 56. arenarius, *Pall.* | 43 | ... | Do. do. | | | | | | | | | | |
| 57. exustus, *Tem.* | 44 | ... | × | × | × | × | × | × | × | ... | ... | ... | ... |
| 58. alchata, *Linn.* | 45 | ... | Does not breed in India. | | | | | | | | | | |
| 59. Lichtensteini, *Tem.* | 46 | ... | Do. do. | | | | | | | | | | |
| 60. fasciatus, *Scop.* | 47 | ... | ... | × | × | × | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Syrrhaptes.** | | | | | | | | | | | | | |
| 61. thibetanus, *Gould* | 48 | ... | Does not breed in India. | | | | | | | | | | |
| **Family—PHASIANIDÆ.** | | | | | | | | | | | | | |
| **Sub-Family—PAVONINÆ.** | | | | | | | | | | | | | |
| Gen. **Pavo.** | | | | | | | | | | | | | |
| 62. cristatus, *Linn.* | 49 | ... | ... | ... | ... | ... | ... | × | × | .. | ... | ... | ... |
| 63. muticus, *Linn.* | 49 | ... | ... | .. | ... | ... | ... | ... | × | .. | ... | ... | ... |
| Gen. **Argusianus.** | | | | | | | | | | | | | |
| 64. argus, *Linn.* | 50 | .. | ... | . | ... | ... | . . | ... | ? | ... | ... | ... | ... |
| Gen. **Polyplectron.** | | | | | | | | | | | | | |
| 65. thibetanum, *Gm.* | 51 | ... | ... | ... | ... | ... | ... | ... | ? | ... | ... | ... | ... |
| **Family—MEGAPODIDÆ.** | | | | | | | | | | | | | |
| Gen. **Megapodius.** | | | | | | | | | | | | | |
| 66. nicobariensis, *Blyth.* | 52 | ... | ... | ... | ... | ... | ... | ... | ? | ... | .. | ... | ... |
| **Sub-Family—PHASIANINÆ.** | | | | | | | | | | | | | |
| Gen. **Crossoptilon.** | | | | | | | | | | | | | |
| 67. thibetanum, *Hodgs.* | 53 | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... |

| | PAGE | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Breeding Calendar.** | | | | | | | | | | | |
| Gen. **Lophophorus.** | | | | | | | | | | | | | |
| 68. Impeyanus, *Linn.* | 53 | | | | | × | × | | | | | | |
| 69. Sclateri, *Jerd.* | 54 | | | | | | | | | | | | |
| Gen. **Ceriornis.** | | | | | | | | | | | | | |
| 70. satyra, *Linn.* | 54 | | | | × | × | | | | | | | |
| 71. melanocephalus, *Gray.* | 55 | | | | × | × | | | | | | | |
| Gen. **Ithaginis.** | | | | | | | | | | | | | |
| 72. cruentus, *Hardw.* | 57 | | | | | | | | | | | | |
| Gen. **Pucrasia.** | | | | | | | | | | | | | |
| 73. macrolopha, *Lesson.* | ... | | | | × | × | | | | | | | |
| Gen. **Phasianus.** | | | | | | | | | | | | | |
| 74. Wallichii | ... | | | | × | × | × | | | | | | |
| Gen. **Euplocamus.** | | | | | | | | | | | | | |
| 75. albocristatus, *Vigors.* | 60 | | | | × | × | × | | | | | | |
| 76. leucomelanus, *Lath.* | 61 | | | | × | × | × | | | | | | |
| 77. melanonotus, *Blyth.* | 61 | | | × | × | × | | | | | | | |
| 78. horsfieldi, *G R. Gray.* | 62 | | | | × | × | | | | | | | |
| 79. lineatus, *Elliott.* | 63 | | | × | × | | | | | | | | |
| 80. Cuvieri, *Tem.* | 63 | | | | | | | | | | | | |
| 81. Andersoni, *Elliot.* | 64 | | | | | | | | | | | | |
| 82. Vieillotti, *G. R. Gray.* | 64 | | | | | | × | ? | | | | | |
| **Sub-Family—GALLINÆ.** | | | | | | | | | | | | | |
| Gen. **Gallus.** | | | | | | | | | | | | | |
| 83. ferrugineus, *Gmel.* | 65 | ? | × | × | × | × | × | | | | | | |
| 84. Sonnerati, *Tem.* | 66 | | × | × | | | | | | | | | |
| 84*a* Lafayetti, *Less.* | ... | | × | × | × | × | × | × | × | | | | |
| Gen. **Galloperdix.** | | | | | | | | | | | | | |
| 85. spadiceus, *Gmel* | 67 | | | × | × | × | × | | | | | | |
| 86. lunulatus, *Valenc.* | 68 | | | × | × | × | | | | | | | |
| 87. zeylonensis, *Gmel.* | 69 | | | | | | × | × | × | | | | |
| **Family—TETRAONIDÆ.** | | | | | | | | | | | | | |
| **Sub-Family—PERDICINÆ.** | | | | | | | | | | | | | |
| Gen. **Tetraogallus.** | | | | | | | | | | | | | |
| 88. himalayensis, *G. R. Gray* | 70 | | | | | | × | × | | | | | |
| 89. thibetanus, *Gould.* | 70 | | | | | × | × | | | | | | |
| Gen **Lerwa.** | | | | | | | | | | | | | |
| 90. nivicola, *Hodgs.* | 71 | | | | | × | × | | | | | | |
| Gen. **Francolinus.** | | | | | | | | | | | | | |
| 91. vulgaris, *Steph.* | 71 | | | | | | | × | × | | | | |
| 92. pictus, *J. & S.* | 72 | | | | | | | × | × | | | | |
| 93. chinensis, *Osb.* | 73 | | | | | | × | × | | | | | |

| | PAGE | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **Breeding Calendar.** | | | | | | | | | | | |
| Gen. **Caccabis.** | | | | | | | | | | | | | |
| 94. chukor, *Gray* | 74 | ... | ... | ... | ... | × | × | × | ... | ... | ... | ... | ... |
| Gen. **Ammoperdix.** | | | | | | | | | | | | | |
| 95. bonhami, *Gray* | 75 | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Ortygornis.** | | | | | | | | | | | | | |
| 96 ponticeriana, *Gmel.* | 75 | ... | × | × | × | ... | ... | × | × | × | × | ... | ... |
| 97. gularis, *Tem.* | 76 | ... | ... | × | × | × | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Arboricola.** | | | | | | | | | | | | | |
| 98. torqueola, *Valenc.* | 77 | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... | ... |
| 99. atrogularis, *Blyth* | 78 | ... | ... | ... | ... | ... | ... | × | ... | ... | ... | ... | ... |
| 100. brunneipectus, *Tickell.* | 78 | ... | ... | ... | ... | ... | × | ... | ... | ... | ... | ... | ... |
| 101 chloropus, *Tickell.* | 79 | ... | ... | ... | ... | ... | ? | ? | ... | ... | ... | ... | ... |
| 102. intermedia, *Blyth.* | 79 | ... | ... | ... | ... | ... | ? | ? | ... | ... | ... | ... | ... |
| 103. rufogularis, *Blyth* | 80 | ... | ... | ... | ... | ... | ? | ? | ... | ... | ... | ... | ... |
| 104. Mandelli, *Hume* | 80 | ... | ... | ... | ... | ... | ? | ? | ... | ... | ... | ... | ... |
| Gen. **Bambusicola.** | | | | | | | | | | | | | |
| 105 Fytchii, *Andr.* | 81 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Caloperdix.** | | | | | | | | | | | | | |
| 106. oculea, *Tem.* | 82 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Rollulus.** | | | | | | | | | | | | | |
| 107. roulroul, *Scop.* | 83 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Perdicula.** | | | | | | | | | | | | | |
| 108. asiatica, *Lath.* | 84 | ... | ... | ... | ... | ... | ... | ... | ... | × | × | × | × |
| 109. argoondah, *Sykes* | 84 | ... | ... | ... | ... | ... | ... | ... | × | × | × | × | ... |
| Gen. **Ophrysia.** | | | | | | | | | | | | | |
| 110. superciliosa, *J. E. Gray* | 85 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Microperdix.** | | | | | | | | | | | | | |
| 111. erythrorhyncha, *Sykes* | 86 | × | × | × | ... | ... | ... | ... | ... | × | × | ... | ... |
| 112. Blewitti, *Hume.* | 87 | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... | ... |
| **Sub-Family.—COTURNICINÆ.** | | | | | | | | | | | | | |
| Gen. **Coturnix.** | | | | | | | | | | | | | |
| 113. communis, *Linn.* | 87 | ... | × | × | × | ... | ... | ... | ... | ... | ... | ... | ... |
| 114. coromandelica, *Gmel.* | 89 | ... | ... | ... | ... | ... | ... | × | × | × | × | ... | ... |
| Gen. **Excalfactoria.** | | | | | | | | | | | | | |
| 115. chinensis, *Linn.* | 89 | ... | ... | ... | ... | ... | × | × | × | × | ... | ... | ... |
| **Family—TINAMIDÆ.** | | | | | | | | | | | | | |
| Gen. **Turnix.** | | | | | | | | | | | | | |
| 116. plumbipes, *Hodgs* | 91 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| 117. Joudera, *Hodgs.* | 91 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| 118. Dussumieri, *Tem.* | 92 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| 119. maculosa, *Tem.* | 93 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| 120. albiventris, *Hume* | 93 | ... | ... | ... | ... | ... | ... | ? | ... | ... | ... | ... | ... |

| | PAGE | January. | February. | March. | April. | May. | June. | July | August. | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | BREEDING CALENDAR. | | | | | | | | | | | |
| **ORDER—GRALLATORES.** | | | | | | | | | | | | | |
| **Tribe—PRESSIROSTRES.** | | | | | | | | | | | | | |
| **Family—OTITIDÆ.** | | | | | | | | | | | | | |
| Gen. **Otis.** | | | | | | | | | | | | | |
| 121. tarda, *Linn.* | 94 | Do not breed in India. | | | | | | | | | | | |
| 122 tetrax, *Linn.* | 96 | | | | | | | | | | | | |
| Gen. **Eupodotis.** | | | | | | | | | | | | | |
| 123. Edwardsi, *Gray* | 97 | ... | ... | ... | ... | ... | ... | × | × | × | ... | ... | ... |
| Gen. **Houbara.** | | | | | | | | | | | | | |
| 124. Macqueeni, *Gray* | 98 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Sypheotides.** | | | | | | | | | | | | | |
| 125. bengalensis, *Gmel.* | 100 | ... | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... |
| 126. auritus, *Lath.* | 101 | ... | ... | ... | ... | ... | ... | × | × | × | ... | ... | ... |
| Gen. **Cursorius.** | | | | | | | | | | | | | |
| 127. coromandelicus, *Gmel.* | 102 | ... | ... | ... | × | × | × | ... | ... | ... | ... | ... | ... |
| 128. gallicus, *Gmel.* | 102 | ... | ... | ... | × | × | × | ... | ... | ... | ... | ... | ... |
| **Sub-Family—CHARADRINÆ.** | | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Squatarola.** | | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 129. helvetica, *Linn.* | 103 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Charadrius** | 104 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 130. fulvus, *Gm.* | 104 | ... | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... |
| 131. pluvialis, *Linn.* | 105 | ... | ... | ... | ... | ? | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Ægialitis.** | | | | | | | | | | | | | |
| 132. Geoffroyi, *Wagl.* | 106 | ... | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... |
| 133. mongolica, *Pall.* | 106 | ... | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... |
| 134. cantiana, *Lath.* | 107 | In Ceylon. | | | | ... | × | × | ... | ... | ... | ... | ... |
| 135. dubia, *Scop.* | 108 | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... |
| 136. Jerdoni, *Legge.* | 109 | ... | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... |
| Gen. **Vanellus.** | | | | | | | | | | | | | |
| 137. cristatus, *Meyer* | 110 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Chettusia.** | | | | | | | | | | | | | |
| 138. gregaria, *Pall* | 110 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 139. leucura, *Licht.* | 112 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 140. cinerea, *Blyth* | 112 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | |
| **Sub-Family—ÆSACINÆ.** | | | | | | | | | | | | | |
| Gen. **Æsacus.** | | | | | | | | | | | | | |
| 141. recurvirostris, *Cuv.* | 113 | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Œdicnemus.** | | | | | | | | | | | | | |
| 142. crepitans, *Tem.* | 114 | ... | × | × | × | × | × | ... | ... | ... | ... | ... | ... |

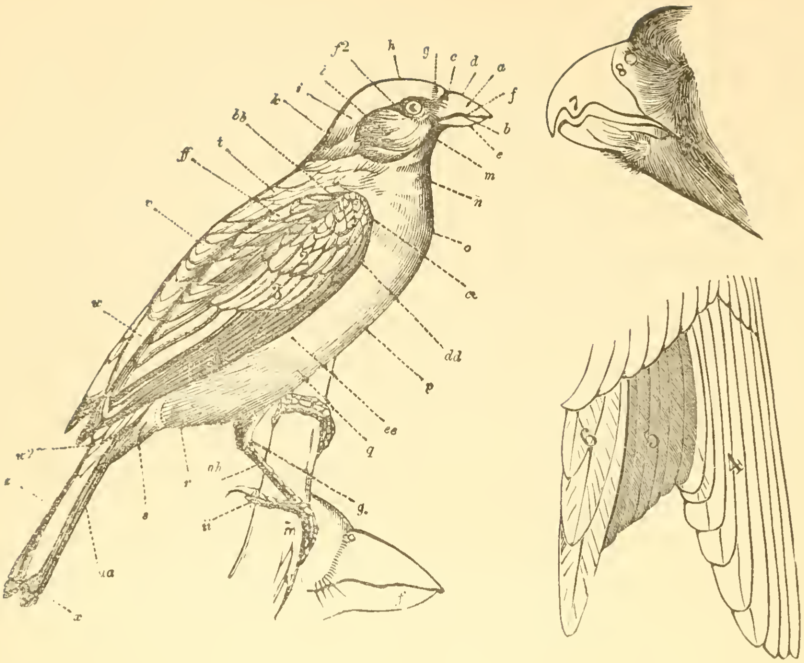
| | PAGE | Breeding Calendar. January. | February. | March. | April. | May. | June. | July | Augpst. | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Family—HÆMATOPODIDÆ.** | | | | | | | | | | | | | |
| **Sub-Family—STREPSILINÆ.** | | | | | | | | | | | | | |
| Gen. **Strepsilas.** | | | | | | | | | | | | | |
| 143. interpres, *Linn.* | 115 | | | | | | | | | | | | |
| Gen. **Dromas.** | | | | | | | | | | | | | |
| 144. ardeola, *Payk.* | 117 | | | | | × | × | × | | | | | |
| Gen. **Hæmatopus.** | | | | | | | | | | | | | |
| 145. ostralegus, *Linn.* | 117 | | | | | | | | | | | | |
| **Family—GRUIDÆ.** | | | | | | | | | | | | | |
| Gen. **Grus.** | | | | | | | | | | | | | |
| 146. antigone, *Linn.* | 118 | | | | | | | × | × | | | | |
| 147. leucogeranus, *Pall.* | 119 | | | | | | | | | | | | |
| 148. cinerea, *Bechst.* | 119 | | | | | | | | | | | | |
| Gen. **Anthropoides.** | | | | | | | | | | | | | |
| 149. virgo, *Linn.* | 121 | | | | | | | | | | | | |
| **TRIBE—LONGIROSTRES.** | | | | | | | | | | | | | |
| **Family—SCOLOPACIDÆ.** | | | | | | | | | | | | | |
| Gen. **Scolopax.** | | | | | | | | | | | | | |
| 150. rusticola, *Linn.* | 122 | | | | | | × | | | | | | |
| Gen. **Gallinago.** | | | | | | | | | | | | | |
| 151. nemoricola, *Hodgs.* | 122 | | | | | | | | | | | | |
| 152. solitaria, *Hodgs.* | 122 | | | | | | ? | | | | | | |
| 153. stenura, *Kuhl.* | 124 | | | | | | | | | | | | |
| 154. scolopacina, *Bonap.* | 125 | | | | | | | | | | | | |
| 155. gallinula, *Linn.* | 127 | | | | | | | | | | | | |
| Gen. **Rhynchæa.** | | | | | | | | | | | | | |
| 156. capensis, *Linn.* | 128 | | | | | | | | | | | | |
| Gen. **Limicola.** | | | | | | | | | | | | | |
| 157. platyrhyncha, *Tem,* | 129 | | | | | | | | | | | | |
| **Sub-Family—TRINGINÆ.** | | | | | | | | | | | | | |
| Gen. **Eurynorhynchus.** | | | | | | | | | | | | | |
| 158. pygmæus, *Linn.* | 129 | | | | | | | | | | | | |
| Gen. **Tringa.** | | | | | | | | | | | | | |
| 159. minuta, *Leisl.* | 130 | | | | | | | | | | | | |
| 160. subminuta, *Midd.* | 131 | | | | | | | | | | | | |
| 161. Temmincki, *Leisl.* | 132 | | | | | | | | | | | | |
| 162. crassirostris, *Tem.* | 132 | | | | | | | | | | | | |
| 163, subarquata, *Gould* | 133 | | | | | | | | | | | | |
| 164. cinclus, *Linn* | 134 | | | | | | | | | | | | |

| | PAGE | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Breeding Calendar. | | | | | | | | | | | |
| Gen. Machetes. | | | | | | | | | | | | | |
| 165. pugnax, *Linn.* | 135 | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... |
| Gen. Calidris. | | | | | | | | | | | | | |
| 166. arenaria, *Linn.* | 136 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Sub-Family—PHALAROPINÆ. | | | | | | | | | | | | | |
| Gen. Phalaropus. | | | | | | | | | | | | | |
| 167. hyperboreus, *Linn.* | 136 | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... |
| 168. fulicarius, *Linn.* | 137 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Sub-Family—TOTANINÆ. | | | | | | | | | | | | | |
| Gen. Actitis. | | | | | | | | | | | | | |
| 169. hypoleucos, *Linn.* | 138 | ... | ... | ... | ... | | ... | ... | ... | ... | ... | ... | ... |
| 170. ochropus, *Linn.* | 138 | .. | ... | . | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Totanus. | | | | | | | | | | | | | |
| 171. glareola, *Gmel.* | 139 | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... |
| 172. canescens, *Gmel.* | 140 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 173. stagnatilis, *Bechst.* | 140 | ... | ... | ... | ... | ... | . | ... | ... | ... | ... | ... | ... |
| 174. calidris, *Linn.* | 141 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 175. fuscus, *Linn* | 141 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 176. Haughtoni, *Hume.* | 142 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 177. dubius, *Murray.* | 142 | .. | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... |
| Gen. Terekia. | | | | | | | | | | | | | |
| 178. cinerea, *Linn.* | 143 | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Sub-Family—LIMOSINÆ. | | | | | | | | | | | | | |
| Gen. Pseudoscolopax. | | | | | | | | | | | | | |
| 179. semipalmatus, *Jerd.* | 144 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Limosa. | | | | | | | | | | | | | |
| 180. ægocephala, *Linn.* | 145 | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 181. lapponica, *Linn.* | 146 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Sub-Family—NUMENINÆ. | | | | | | | | | | | | | |
| Gen. Numenius. | | | | | | | | | | | | | |
| 182. phæopus, *Linn.* | 148 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 183. arquatus, *Linn.* | 149 | . | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Ibidorhynchus. | | | | | | | | | | | | | |
| 184. Struthersii, *Vigors.* | 150 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

| Species. | Page | January | February. | March | April. | May. | June. | July. | August. | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sub-Family—RECURVIROSTRINÆ.** | | | | | | | | | | | | | |
| Gen. **Recurvirostra.** | | | | | | | | | | | | | |
| 185. avocetta, *Linn.* | 150 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Himantopus.** | | | | | | | | | | | | | |
| 186. candidus, *Linn.* | 150 | ... | ... | ... | ... | ... | × | ... | ... | ... | ... | ... | ... |
| **Family—PARRIDÆ.** | | | | | | | | | | | | | |
| Gen. **Metopodius.** | | | | | | | | | | | | | |
| 187. indicus, *Lath.* | 152 | ... | ... | ... | ... | × | × | × | ... | ... | ... | ... | ... |
| **Sub-Family—PARRINÆ.** | | | | | | | | | | | | | |
| Gen. **Hydrophasianus.** | | | | | | | | | | | | | |
| 188. chirurgus, *Scop.* | 153 | ... | ... | ... | ... | × | × | × | × | × | ... | ... | ... |
| **Family—RALLIDÆ.** | | | | | | | | | | | | | |
| **Sub-Family—GALLINULINÆ.** | | | | | | | | | | | | | |
| Gen. **Porphyrio.** | | | | | | | | | | | | | |
| 189. poliocephala, *Lath.* | 154 | ... | ... | ... | ... | × | × | × | × | × | ... | ... | ... |
| Gen. **Fulica.** | | | | | | | | | | | | | |
| 190. atra, *Linn.* | 155 | ... | ... | ... | ... | × | × | × | × | × | ... | ... | ... |
| Gen. **Podica.** | | | | | | | | | | | | | |
| 191. personata, *G. R. Gray* | 155 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Hypotænidia.** | | | | | | | | | | | | | |
| 192. striata, *Linn.* | 156 | ... | ... | ... | ... | × | × | × | × | × | ... | ... | ... |
| Gen. **Rallus.** | | | | | | | | | | | | | |
| 193. indicus, *Blyth.* | 157 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Rallina.** | | | | | | | | | | | | | |
| 194. euryzonoides, *Lafr.* | 158 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 195. fasciata, *Raffl.* | 159 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 196. Canningi, *Tytler.* | 159 | ... | ... | ... | ... | ... | ... | × | ... | ... | ... | ... | ... |
| **Sub-Family—RALLINÆ.** | | | | | | | | | | | | | |
| Gen. **Porzana.** | | | | | | | | | | | | | |
| 197. Bailloni, *Vieill.* | 160 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| 198. maruetta, *Linn.* | 161 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 199. fusca, *Linn.* | 162 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| 200. minuta, *Pall.* | 162 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 201. akool, *Sykes* | 162 | ... | ... | ... | ... | ... | × | × | × | ... | ... | ... | ... |
| Gen. **Gallinula.** | | | | | | | | | | | | | |
| 202. chloropus, *Linn.* | 163 | ... | ... | ... | ... | ... | × | × | × | ... | ... | ... | ... |
| 203. phœnicura, *Penn.* | 164 | ... | ... | ... | ... | ... | × | × | × | ... | ... | ... | ... |

| Species. | Page | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Breeding Calendar. | | | | | | | | | | | |
| **Gen. Gallicrex.** | | | | | | | | | | | | | |
| 204. cinereus,, *Gmel.* | 165 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **Family—ARDEIDÆ.** | | | | | | | | | | | | | |
| **Gen. Ardea.** | | | | | | | | | | | | | |
| 205. goliath, *Tem.* | 166 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 206. sumatrana, *Raffles* | 167 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 207. insignis, *Hodgs.* | 168 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 208. cinerea, *Linn* | 168 | ... | ... | ... | ... | × | × | × | × | ... | ... | ... | ... |
| 209. purpurea, *Linn.* | 169 | ... | ... | ... | ... | × | × | × | × | ... | ... | ... | ... |
| **Family—CYGNIDÆ.** | | | | | | | | | | | | | |
| **Gen. Cygnus.** | | | | | | | | | | | | | |
| 210. olor. *Gm.* | 170 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **Family—ANSERIDÆ.** | | | | | | | | | | | | | |
| **Sub-Family—ANSERINÆ.** | | | | | | | | | | | | | |
| **Gen. Anser.** | | | | | | | | | | | | | |
| 211. cinereus, *Meyer* | 171 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 212. brachyrrhynchus, *Baillon.* | 172 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 213. albifrons, *Gm.* | 173 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 214. erythropus, *Linn.* | 174 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 215. indicus, *Lath.* | 174 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **Family—ANATIDÆ.** | | | | | | | | | | | | | |
| **Sub-Family—PLECTROPTERINÆ.** | | | | | | | | | | | | | |
| **Gen. Sarkidiornis.** | | | | | | | | | | | | | |
| 216. melanonotus, *Penn.* | 175 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| **Gen. Nettapus.** | | | | | | | | | | | | | |
| 217. coromandelianus, *Gmel.* | 176 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| **Gen. Dendrocygna.** | | | | | | | | | | | | | |
| 218. Javanica, *Horsf.* | 177 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| 219. fulva, *Gmel.* | 178 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **Gen. Casarca.** | | | | | | | | | | | | | |
| 220. rutila, *Pall* | 178 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 221. scutulata, *P. L. S. Mull* | 179 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **Gen. Tadorna.** | | | | | | | | | | | | | |
| 222. cornuta, *Gm.* | 180 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

| Species. | Page | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Breeding Calendar. | | | | | | | | | | | |
| Gen. Spatula. | | | | | | | | | | | | | |
| 223. clypeata, *Linn.* | 181 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Anas. | | | | | | | | | | | | | |
| 224. boscas, *Linn.* | 183 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| 225. pæcilorhyncha, *Forst.* | 183 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 226. caryophyllacea, *Lath.* | 184 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Chaulelasmus. | | | | | | | | | | | | | |
| 227. streperus, *Linn* | 185 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 228. angustirostris, *Menet* | 186 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Dafila. | | | | | | | | | | | | | |
| 229. acuta, *Linn.* | 188 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Mareca. | | | | | | | | | | | | | |
| 230. penelope, *Linn.* | 190 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Querquedula. | | | | | | | | | | | | | |
| 231. crecca, *Linn.* | 191 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 232. circia, *Linn.* | 192 | ... | ... | ... | ... | ... | ... | × | × | × | ... | ... | ... |
| 233. formosa, *Georgi* | 193 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 234. falcata, *Georgi.* | 194 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Fuligula. | | | | | | | | | | | | | |
| 235. rufina, *Pall.* | 196 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 236. cristata, *Linn,* | 197 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 237. marila, *Lnn.* | 198 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 238. ferina, *Linn.* | 199 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 239. nyroca, *Gould.* | 200 | ... | ... | ... | ... | ... | ... | × | × | ... | ... | ... | ... |
| Gen. Clangula. | | | | | | | | | | | | | |
| 240. glaucion, *Linn.* | 201 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Erismatura. | | | | | | | | | | | | | |
| 241. leucocephala, *Scop.* | 202 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. Mergus. | | | | | | | | | | | | | |
| 242. serrator, *Linn* | 203 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 243. merganser, *Linn,* | 204 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| 244. albellus, *Linn.* | 204 | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |



*a* Upper mandible.
*b* Lower mandible.
*c* Nostrils.
*d* Culmen or keel.
*e* Gonys.
*f* Margins of mandibles or commissure.
*f2* Ophthalmic region, or orbit.
*g* Forehead.
*h* Crown.
*i* Sinciput or hind head.
*k* Nape.
*l* Ear-coverts.
*m* Chin or mentum.
*n* Throat.
*o* Breast.
*p* The body.
*q* Belly or abdomen.
*r* Vent.
*s* Under-tail coverts.

*t* Interscapularies or back.
*v* Lower back.
*w* Rump.
*w2* Upper-tail coverts.
*x* Tail feathers.
*z* Central or median tail feathers.
*aa* Lateral tail feathers.
*bb* Shoulder of wing.
*cc* Shoulder joint (lesser wing coverts).
*dd* Axilla, or edge of wing.
*ee* Spurious wing or primary coverts.
*ff* Scapulars.
*gg* Thigh or tibia.
*hh* Tarsus.
*ii* Toes.

1 Lesser coverts.
2 Median coverts.
3 Greater coverts.
4 Primaries.
5 Secondaries.
6 Tertiaries.
7 Festoon.
8 Cere.

# THE EDIBLE AND GAME BIRDS OF BRITISH INDIA WITH ITS DEPENDENCIES AND CEYLON.

## ORDER.—PASSERIFORMES.

### Section.—FRINGILLIFORMES.

### Family.—FRINGILLIDÆ.

Birds with conical bill, usually entire at the tip, the lower mandible generally of the same proportion as the upper, but in some deeper; margin of bill not toothed or indented; wings moderate; tail moderate or short, even, rounded or emarginated; feet fitted for walking on the ground. They are chiefly ground-feeders, and while some may be said to be omnivorous, others feed almost exclusively on grain. They nidificate on trees, holes in rocks, or banks of nullahs and river beds. Plumage generally plain, in some only sandy. They are usually possessed of much intelligence, and there are among them some of the most familiar birds, which are the most appreciable songsters. The gizzard of many is thick and muscular, and in such cases the birds swallow stone, or gravel, to assist the trituration of the seeds they feed on.

### Sub-Family.—EMBERIZINÆ.

Bill flattened on the sides, smaller and more compressed than in *Passer*, the edges indented or waved—a palatal knob on upper mandible; wings pointed; tarsi moderate, scutate; hind toe longer than inner; tail moderate, even, or emarginate.

### Gen. Emberiza.

Bill small; second to 4th quills longest; tail rather forked; outermost feather white or whitish.

All the species of this Genus, are snared in great numbers wherever they occur, and brought to market for sale as Ortolan. That they are its allies there can be no doubt, but besides members of the Emberizinæ, the common crested and other Larks, Finches, and Sparrows also do duty for it. As in England, dealers keep as many as five or six hundred at a time of all species, including *Pyrrhulauda grisea*, in large cages and feed them most liberally on

bajree and jowaree and so fatten them for the table; they are however quite as good on the day they are snared or shot, and make most excellent dishes in the hands of a good *chef de cusine.* When fattened artificially they are simply masses of fat, and in a gastronomical point of view, without exception, all the Emberizinæ, as well as larks, are much esteemed. When snared at long distances, a process of pickling with spices, &c., is resorted to.

The following are all the species of Emberiza which find their way to the table under the name of Ortolan.

**1. Emberiza schœniclus,** *Linn., Syst. Nat.* i. p. 311; *Yarrell, Br. B.* i. p. 438; *Hume, Ibis,* 1869, p. 355; *Sharpe, Cat. B. Br. Mus.* xii. p. 457. *Murray, Avif. Brit. Ind.* ii. p. 326, No. 859. Emberiza schœnicola, *Hume, Ibis,* 1871, p. 38; *C. Swinh., Ibis,* 1882.—The Rosy Ortolan.

*Adult Male in breeding plumage.*—General color above rufous, the feathers margined paler, and those of the mantle and back with broad black centres; lower back, rump and upper tail coverts ashy grey, mesially centred with black or pale brown; scapulars and lesser and median wing coverts chestnut, the scapulars centred with black and the latter with black bases; greater coverts black with chestnut margins and sandy buff outer edges; bastard wing and primary coverts dusky brown, edged with ashy or pale rufous, which color also fringes the outer webs of the quills, which are blackish; tail dark brown, margined with whitey brown, the outer pairs of feathers white on the outer web, except a dusky mark at the tip; the inner web white at the base only; crown of the head, sides of the face, ear coverts, throat and foreneck black; sides of the neck, a demi-collar on the neck, cheeks, under tail coverts, axillaries, under wing coverts and under surface of the body white; the sides of the body streaked with black, also the flanks; sides of the breast ashy grey with narrow streaks of black; thighs brown.

*Length.*—6 inches; wing 3; tail 2·6; tarsus 0·75; culmen 0·45.

In winter the upper plumage is rufous chestnut with narrow central black streaks, and the black of the head, throat and neck is fringed with sandy brown.

*The adult female in breeding plumage* has the head reddish brown instead of black, the feathers mesially streaked with black like the back; ear coverts reddish brown; above the eye a streak of sandy buff; cheeks white; hind neck ashy with central black streaks; foreneck rufous and also streaked with black; under surface of body white, the sides streaked with dusky.

*Length.*—5·2 inches; wing 2·9; tail 2·4; tarsus 0·7; culmen 0·45.

*Hab.*—The whole of Europe extending as far as Kamtschatka, reaching in winter to the N.-W. Provinces of India in the Punjab and S. Afghanistan.

**2. Emberiza pusilla,** *Pall., Reis. Russ. Reichs,* iii. p. 697; *Blyth, J. A. S. B.* xv. p. 40; *id., Ibis,* 1867, p. 42; *Gould, B. Asia,* v. pl. 7; *Hume, Str. F.* 1876, p. 279; *Anderson, Zool. Exped. Yunan Aves,* p. 604; *Hume and Dav., Str. F.* 1878, p. 407; *Seebohm., Ibis,* 1882, p. 379;

*Oates*, *B. Br. Burm.* i. p. 343; *Sharpe*, *Cat. B. Br. Mus.* xii. p. 487; *Murray*, *Avif. Brit. Ind.* ii. p 327, No. 860. Ocyris oinops, *Hodgs.*, *Icon. ined. in Br. Mus. Passeres*, pl. 292.—The Dwarf Bunting.

Upper plumage streaked with black, rufous and grey; forehead to nape over the crown light chestnut and a similar line over the ear coverts; lores, sides of the face, ear coverts and throat light or vinous chestnut, with a black moustachial line extending behind the ear coverts; hind neck and sides of the neck pale chestnut streaked with whitish; chin and upper throat pale chestnut; lower throat and under surface of the body dull white, streaked with black; under wing coverts and axillaries white; wing coverts brown edged with rufous, the median series broadly tipped with rufous forming a wing bar; bastard wing, primary coverts and quills blackish, fringed on the outer web with brown, the primaries margined with ashy brown and the secondaries with rufous; tail brown or blackish brown edged with lighter brown, the penultimate feathers with a white diagonal or wedge-shaped bar of white on the inner web, the outer pair with a larger band extending to both webs.

In winter the male has the black bands fringed with rufous and the head is not so rufous.

The female in summer is similar to the male in winter, but it wants the chestnut on the throat which is white and bounded by a black moustachial line on both sides. Bill horny; legs pale fleshy; irides brown.

*Length.*—5·25 inches; wing 2·8; tail 2·4; tarsus 0·7; culmen 0·4.

*Hab.*—Northern Europe, wintering in the Himalayas, Assam, Burmah and Tenasserim. Recorded from Nepaul, Sikkim, Shillong, Khasia hills, Sylhet, Munipoor and Mooleyit in Tenasserim. It occurs in small flocks in bare spots of ground covered with low bushes. According to Seebohm it breeds in Siberia, building on the ground, amongst dead leaves, a nest made of moss and grass, thickly lined with fine grass. Eggs, 5 in number, pale grey, blotched and spotted with darker and paler grey.

3. **Emberiza fucata.** *Pall.*, *Reis. Russ. Reichs*, iii. p. 608; *Gm.*, *Syst. Nat.* i. p. 871; *Jerd.*, *B. Ind.* ii. p. 375; *Blyth*, *Ibis*, 1867, p. 42; *Beavan*, *t. c.* p. 41; *Gould*, *B. Asia*, v. pl. 9; *Godwin-Austen*, *J. A. S. B.* 1874, p. 171; *Blyth and Wald.*, *B. Burm.* p. 95; *Hume and Dav.*, *Str. F.* 1878, p. 407; *Hume*, *Str. F.* 1879, p. 107; *Oates*, *B. Br. Burm.* i. p. 351; *Sharpe*, *Cat. B. Br. Mus.* xii. p. 493; *Murray*, *Avif. Brit. Ind.* ii. p. 328, No. 861. Euspiza fucata, *Blyth*, *J. A. S. B.* xxiii. p. 215. Citrinella fucata, *Hume*, *Nests and Eggs*, *Ind. B.* p. 465; *id. and Oates*, *Str. F.* 1875, p. 157.—The Grey-headed Bunting.

*Male in breeding plumage.*—Head, nape and sides of the neck grey, streaked with black; back and mantle reddish brown, also streaked with black; rump uniform reddish brown; upper tail coverts isabelline with dark shaft streaks; tail dark brown, with russet edges on the outer webs; the

outer feathers white on the outer web and a diagonal patch of the same on the inner; the next pair dark brown with a patch of white on the inner web near the tip; lesser and median wing coverts chestnut, the latter with black shaft stripes, the greater series and inner secondaries dark or dusky brown margined broadly on both webs with reddish brown; primaries and secondaries brown, also margined on the outer webs with reddish brown; lores and feathers round the eye greyish brown; ear coverts chestnut; cheeks and a line below the ears white, below which latter again is a thin black line which widens on the neck and forms an interrupted pectoral gorget, below which again is another of chestnut; chin and throat white; under surface of the body isabelline or fawn colour, the flanks streaked with black.

In winter the male has an olive brown head, much mixed with grey; the black gorget line is not so evident and the chestnut streak below is wanting. Bill dark fleshy brown; iris brown.

*Length.*—5·15 to 6·5 inches; tail 2·7; wing 2·8; tarsus 0·8; culmen 0·5.

*Hab.*—Eastern Siberia and Japan. Resident in the N.-W. Himalayas, migrating to the Burmese countries and the plains of India during winter. According to Oates it is a common winter visitor to Pegu, and is said to be found nearly throughout British Burmah and parts of Tenasserim. Breeds under tufts of grass, or under a large stone, making a shallow cup lined with grasses and hairs. Eggs, 4 in number, greenish grey, marked with reddish brown.

**4. Emberiza melanocephala,** *Scop.*, *Ann.* i. p. 142; *Tem. Man. d' Orn.* i. p. 393; *Sykes, P. Z. S.* 1832, p. 93; *Gould, B. Eur.* iii. pl. 172; *Jerd., Madr. Journ.* xi. p. 29; *Blyth, J. A. S. B.* xiii. p. 957; *Sharpe, Cat. B. Br. Mus.* xii. p. 503; *Murray, Avif. Brit. Ind.* ii. p. 329, No. 862. Euspiza melanocephala, *Bp.*, *Comp. List B. Eur. and N. Amer.* p. 32; *Blyth, Cat. B. Mus. As. Soc.* p. 128; *Bp., Consp.* i. p. 488; *Jerd., B. Ind.* ii. p. 378; *Gould, B. Asia.* v. pl. 13; *James, Str. F.* 1871, p. 421; *Brooks, Ibis,* 1873, p. 246; *Butler, Str. F.* 1875, p. 397; *Blanf., E. Pers.* ii. p. 260; *Fairbk., Str. F.* 1876, p. 261; *James, Str. F.* 1877, p. 61; *Hume, Str. F.* 1879, p. 107; *Murray, Vert. Zool., Sind,* p. 188; *id, Zool. of Beloochistan and Afgh.* p. 23; *Swinhoe and Barnes, Ibis,* 1885, p. 129. Euspiza simillima, *Blyth, J. A. S. B.* xviii. p. 811; *Hume, Nests and Eggs Ind. B.* p. 466.—The Black-headed Corn Bunting.

*Male.*—Whole head, feathers under the eye and ear coverts black; in winter edged with yellowish or greyish brown; chin, throat, sides of the neck, and entire under surface bright yellow; sides of the breast chestnut; back and scapulars rich chestnut; rump and upper tail coverts yellowish, with a faint tinge of chestnut on some of the feathers; wing coverts dark brown, the feathers edged and tipped with fulvous; primaries, secondaries and tertiaries brown, the primaries and secondaries narrowly, and the tertiaries broadly margined with fulvous; edge of the wing bright yellow; tail brown, the feathers

edged paler. The *female* is yellowish brown above, the feathers of the head and back with mesial dark streaks ; the chin whitish, and the rest of the under surface very pale yellow ; bill and legs yellowish brown ; irides light brown.

*Length.*—7·5 to 8 inches ; wing 3·8 to 4 ; tail 3 ; bill at front 0·5 ; tarsus 1·0.

In winter plumage the feathers of the male is obscured by ashy margins to the feathers of the head and the back, nearly obscuring the black and chestnut of these parts.

*Hab.*—Sind, Punjab (at Mooltan and Montgomery), Beloochistan, Persia, Afghanistan, Kutch, Kattiawar, Jodhpore, N. Guzerat, Concan and Deccan. Found outside of India, in Turkey, Asia Minor and S.-E. Europe. Arrives in large flocks in the middle of August, and during their stay till October commit great havoc in the barley and jowaree crops.

This species is the most esteemed nearly throughout India, with the next. *Only try grilled Corn-buntings,* and it will be found that there could be no better substitute till the snipe and duck came in.

5. **Emberiza luteola,** *Sparrman, Mus. Carls. fasc.* iv. *Taf.* 93 ; *Sharpe, Cat. B. Br. Mus.* xii. p. 505 ; *Murray, Avif. Brit. Ind.* ii. p. 329, No. 863. Euspiza luteola, *Blyth, Cat. B. Mus. As. Soc.* p. 127 ; *Bp., Consp.* i. p. 469 ; *Jerd., B. Ind.* ii. p. 378 ; *Hume, Str. F.* iii. p. 498 ; *id., Str. F.* 1879, p. 107 ; *Murray, Vert. Zool., Sind,* p. 188.—The Red-headed Bunting.

Head, neck, chin, throat and breast rich chestnut ; sides of the breast greenish yellow ; back and scapulars greenish yellow, the feathers mesially streaked with dark brown ; the whole under surface including the under tail coverts bright yellow ; wing coverts dark brown, broadly edged and tipped with fulvous ; primaries, secondaries and tertiaries brown with fulvous edgings, broader on the tertiaries ; tail brown, the outermost feather on each side much paler, and the rest edged with greenish ; edge of the wing yellow. The female wants the chestnut of the head, chin, throat and breast ; the upper surface is olive brown, and the under surface very pale fulvous ; bill and legs yellowish brown.

*Length.*—6·75 to 7 ; wing 3·5 ; tail 3 ; bill at front 0·5.

The female in summer plumage is light ashy brown above, streaked with blackish shaft lines, the head like the back and the hind neck more uniform ; wings and tail as in the male. The adult male in winter is not unlike the male in summer, but like the preceding has ashy brown edges to the feathers, which obscure the summer plumage, even the yellow rump.

*Hab.*—Sind, Beloochistan, Persia, Afghanistan, E. Turkistan, Punjab, N.-W. Provinces, Oudh, Kutch, Kattiawar, Jodhpore, Jeypore, N. Guzerat, Concan, Deccan and Southern India, also Khandeish and Central India.

This species is generally associated with *E. melanocephala* with which it is netted and snared in abundance. Among the natives, both species are known as Tillur, a name also applied to Starlings.

6. **Emberiza aureola,** *Pall., Reis. Russ. Reichs,* ii. p. 711; *Gm., Syst. Nat.* i. p. 875; *Tem., Man. d'Orn.* iii. p. 232; *Gould, B. Eur.* iii. pl. 174; *Oates, B. Br. Burm.* p. 355; *Sharpe, Cat. B. Br. Mus.* xii. p. 510. Emberiza aureola, *Bp., Comp. List. B. Eur. and N. Amer.* p. 36; *Jerd., B. Ind.* ii. p. 380; *Hume, Str. F.* 1874, pp. 258, 481; *Oates, Str. F.* 1875, p. 159; *Blyth and Wald., B. Burm.* p. 94; *Godwin-Austen, J. A. S. B.* xlv. p. 83; *Hume and Dav., Str. F.* 1878, p. 409; *Hume, Str. F.* 1879, pp. 67, 107; *Scully, t. c.* p. 334; *Bingham, Str. F.* ix. p. 193; *Murray, Avif. Brit. Ind.* ii. p. 330, No. 864. Emberiza flavogularis, *Blyth, J. A. S. B.* xviii. pp. 86, 811.—The YELLOW-BREASTED BUNTING.

Crown of the head, back, rump and scapulars rich chestnut, margined or not with faint yellowish white; forehead, sides of the head, chin and upper throat black; lesser wing coverts smoky brown; the median series white, and the greater ones chestnut, edged with white near the tips; quills brown, the primaries edged on the outer webs with whitey brown, and the rest with pale chestnut; upper tail coverts pale rufous brown; tail brown, edged paler, the outer web of the outer feathers white for two-thirds of its length from the base, and the inner web with a diagonal streak of white; the next feather generally with a small obscure mark of white on the inner web; lower throat, breast and abdomen bright yellow; a band of chestnut feathers across the breast, slightly fringed with black; sides of the body yellow with brown streaks; vent and under tail coverts pale yellow, with a few obscure streaks. (*Oates.*)

During winter the male has no black on the head; the upper plumage is chestnut with very broad greyish yellow fringes; the ear coverts are purplish brown marked with yellow; the chin and throat are deep yellow like the breast and abdomen; the pectoral band becomes obscure by the yellow fringe to the feathers, and the greater coverts are rufous instead of white.

The female at all seasons has the head chestnut brown, streaked with dark brown; the nape, back of the neck, back and scapulars olive brown, more or less tinged with chestnut brown and with dark brown streaks; rump pale chestnut edged with grey; upper tail coverts brown centred darker; all the wing coverts and quills brown, the median series broadly tipped with white and the greater ones and quills edged on the outer webs with pale rufous brown; supercilium reaching to the nape yellowish white; chin and throat whitish; breast, sides of the neck and abdomen bright yellow; tinged with brown across the breast; vent and under tail coverts pale yellow; iris rich brown; upper mandible dark brown; lower fleshy brown; feet and claws pinkish brown.

*Length.*—5·75 to 6·2 inches; wing 3; tail 2·4; tarsus 0·85.

*Hab.*—Northern Europe and Siberia, wintering in the Burmese countries. Found in Nepaul, Assam, Sikkim, Cachar, Munipur, Pegu, Bhamo, Johore and the Nicobars. It is a winter visitor to the whole of Burmah, arriving in

October and leaving in May. Like the last it affects corn crops. The nest is said to be placed on or near the ground in bushes. It is made of dry bents and lined with hair. Eggs, 4—6, greenish, clouded with purplish grey and marked with some dark scrawls.

**7. Emberiza rutila**, *Pall.*, *Reis. Russ. Reichs.* iii. p. 698; *Blyth*, *B. Burm.* p. 95; *Dav. et Oust. Ois Chine*, p. 331; *Wardlaw-Ramsay*, *Ibis*, 1877, p. 462; *Oates, Str. F.* x. p. 234; *Sharpe, Cat. B. Br. Mus.* xii. p. 514; *Murray, Avif. Brit. Ind.* ii. p. 331, No. 865. Euspiza rutila, *Bp.*, *Consp.* i. p. 469; *Hume and Dav.*, *Str. F.* 1878, p. 408; *Hume*, *Str. F.* 1879, p. 107. Citrinella rutila, *Hume*, *Str. F.* 1875, p. 117.—The CHESTNUT BUNTING.

Entire head and upper breast and the whole upper plumage including the wing coverts chestnut, the feathers, except those of the rump, fringed with olive greyish; primaries, secondaries and primary coverts brown, the primaries edged on the outer webs with ashy and the inner secondaries with chestnut; tail brown, margined with olive or lighter brown, the two outer feathers with a small whitish mark near the tip on the outer web; foreneck chestnut, rest of under surface of the body sulphur yellow; the thighs and under tail coverts sulphur yellow; sides of the body and flanks olive greenish, streaked with dusky; axillaries and under wing coverts yellowish white, the bases yellow. Legs and feet grey; iris brownish rufous.

*Length.*—5 inches; wing 2·95; tail 2·25; tarsus 0·7; culmen 0·45.

The female has the top of the head, neck, back, and scapulars olive brown, broadly streaked with black on the mantle and back; hind neck the same but less distinctly streaked; rump and upper tail coverts chestnut, the latter duller and tinged with grey; wing coverts and quills dark brown, edged and tipped with dirty white; lores, feathers round the eye, and a faint eyebrow isabelline; ear coverts pale ashy brown with a streak of blackish along the upper margin; cheeks, chin and throat fulvous brown, separated by a dark brown narrow malar line; under surface of the body pale sulphur yellow, the breast with a few indistinct dusky streaks.

*Length.*—4·5 inches; wing 2·65; tail 1·85; tarsus 0·7; culmen 0·45.

The young male is not unlike the female except that the head and rump are chestnut.

*Hab.*—E. Siberia and N. and S. China, where as well as in the Indo-Burmese countries and the S.-E. Himalayas it winters. In Burmah it has been got in Pegu and near Rangoon. It is also recorded from Sikkim and the Bhootan Doars.

**8. Emberiza spodocephala**, *Pall.*, *Reis. Reichs.* iii. p. 698; *Bp.*, *Consp.* i. p. 465; *Dav. et Oust. Ois. Chine*, p. 329; *Jerd.*, *B. Ind.* ii. p. 374; *Hume*, *Str. F.* 1879, p. 107; *Seebohm*, *Ibis*, 1880, p. 188; *Sharpe*, *Cat. B. Br. Mus.* xii. p. 522; *Murray*, *Avif. Brit. Ind.* ii. p. 332, No. 866. Emberiza melanops, *Blyth*, *J. A. S. B.* xiv. p. 554.—The BLACK-FACED BUNTING.

Head and neck all round, sides of the face, throat and chest olivaceous ashy; lores, base of cheeks and chin black; breast pale sulphur yellow; upper back and scapulars brown washed with rufous, edged with fulvous and broadly streaked mesially with black; lesser wing coverts uniform rufescent; median and greater series blackish brown edged with sandy brown and tipped with buffy white; quills dusky brown, externally washed with rufous, the primaries with ashy white; lower back, rump and upper tail coverts earthy brown; tail dark brown, edged with lighter brown, the centre tail feathers light brown, the penultimate with a large wedge-shaped spot of white near the end of the outer web, and the outer feathers entirely white except a dusky mark on the inner web, and a spot near the tip of the outer web; abdomen whitish; under tail coverts and axillaries pale sulphur yellow; bill brown; feet flesh colour.

*Length.*—4·75 inches; wing 2·7; tail 2·7; tarsus 0·75; culmen 0·45.

The winter plumage of the male is not unlike that of the summer, except being more olive yellow on the head and neck, and the feathers of the crown tipped with rufous brown. The female is browner on the head than the male, there is no black on the face or chin, the cheek stripe is yellow, and there is a distinct malar streak of dusky blackish spots; the lores, eyelids and an indistinct supercilium are yellowish buff; sides of the body and flanks reddish brown; lower abdomen and under tail coverts yellowish white.

*Hab.*—Eastern Himalayas, Assam, Bhootan, Nepaul, Cachar and Munipur, where it winters. Breeds in Siberia eastwards from the Yenesai Valley.

**9. Emberiza Buchanani,** *Blyth, J. A. S. B.* xiii. p. 957; xvi., p. 780; *Hume, Str. F.* 1878, vol. ii. p. 150; *id., Str. F.* 1879, p. 107; *Reid, Str. F.* 1881, p. 57; *Murray, Avif. Brit. Ind.* ii. p. 333, No. 867. Emberiza huttoni, *Jerd., B. Ind.* ii. p. 373; *Blyth, Ibis,* 1867, p. 42; *Blanford, t. c.* p. 463; *Hume, Ibis,* 1870, p 400; *Blanf., East. Pers.* ii. p. 258; *Murray, Vert. Zool., Sind,* p. 185.—The GREY-NECKED BUNTING.

Head, neck, nape, and sides of the neck grey; from the lower corner of the under mandible on each side is a short streak of buffy, between which and the chin—which is also buff—is a streak of greyish, meeting the grey of the sides of the neck; orbital feathers whitish; back grey, with a slight rufescent tinge, the feathers being faintly striated; rump and upper tail coverts greyish brown, unstriated; breast and rest of lower surface reddish brown or ferruginous, paler on the abdomen and vent, and nearly buff on the under tail coverts; lesser coverts ferruginous; median and greater coverts brown, edged with ferruginous; primaries dull brown, margined narrowly on their outer, and broadly on their inner web with pale white or rufescent white; secondaries the same, but the feathers also tipped with pale rufous; edge of the wing fulvous; tail blackish brown, the outer web of the outermost feather, except at the extreme base, and half of the inner web, white; the next outermost

blackish brown on the outer web, and for nearly two-thirds its length on the inner web, blackish brown, the rest white on their *inner web only*; centre tail feathers edged with pale rufous; bill reddish; legs pale brown.

*Length.*—5·75 to 6 inches; wing 3·5; tail 3; tarsi 0·75.

*Hab.*—Sind, Punjab, N.-W Provinces, Central India, Beloochistan, Persia and Afghanistan. Occurs also in Kutch, Rajputana, Guzerat, Concan and the Deccan. Everywhere considered with the White-necked Bunting a delicacy. Most people have a slice of ham or bacon dished with them if made into pie.

Specimens from Jeempeer and Jacobabad (Sind), and Quetta and Dozan (Beloochistan), have the chin and the streak above the greyish moustachial line unspotted buff, except in a single specimen from Dozan.

**10. Emberiza stracheyi**, *Moore, P. Z. S.* 1855, p. 215, pl. 112, *Horsf. and Moore, Cat. B. E. I. Co. Mus.* ii. p. 483; *Jerd., B. Ind.* ii. p. 372; *Brooks, Str. F.* 1875, p. 254; *Hume, Str. F.* 1879, p. 107; *Wardlaw-Ramsay, Ibis,* 1880, p. 65; *Biddulph, Ibis,* 1881, p. 79; *Marshall, Ibis,* 1884, p. 419; *Murray, Avif. Brit. Ind.* ii. p. 333, No. 868. Emberiza Cia (nec. L.), *Jerd., B. Ind.* ii. p. 371; *Beavan, Ibis,* 1868, p. 175; *Cock. and Marsh., Str. F.* 1873, p. 357.—The WHITE-NECKED BUNTING.

Above rufescent brown with black mesial streaks; the rump and upper tail coverts unstreaked; crown of the head pale bluish grey, with a broad band of black on either side of the crown; supercilium ashy white; lores and eyelids black, continued as a streak over the ear coverts, which are ashy whitish and separated from the throat by a streak of black, which meets the other black line; *median and greater wing coverts tipped with rufous but not forming distinct wing bars as in E. Cia*; quills blackish, the primaries margined with ashy whitish, the secondaries with pale rufous, the inner ones being rufous on the inner webs also; middle tail feathers pale rufous, black in the centre, the remainder blackish, edged with sandy rufous, the penultimate feather with a large wedge-shaped mark of white at the tip of the inner web, larger on the outermost, which is also externally margined with white; under surface of the body pale cinnamon rufous washed with isabelline. Bill dark brown or black, the base of the lower mandible bluish; legs and feet fleshy brownish; iris dark brown.

*Length.*—6 to 6·8 inches; wing 3·1; tail 2·85; tarsus 0·7; culmen 0·5.

*Hab.*—From Eastern Beloochistan and Cashmere eastwards to Kumaon, wintering slightly to the southward. It is found plentifully in Gilgit, also at Dhurmsala, Murree, Kotegurh, Simla, Mussoorie, and Bhawulpoor in Sind, also at Mutiana in the Punjab.

**11. Emberiza stewarti,** *Blyth, J. A. S. B.* xxiii. p. 215; *Horsf. and Moore, Cat. B. E. I. Co. Mus.* ii. p. 485; *Jerd., B. Ind.* ii. p. 374; *Hume, Ibis,* 1870, p. 400; *Cock and Marsh., Str. F.* 1878, p. 112; *Hume, Str. F.* 1879, p. 107; *Murray, Str. F.* 1878, p. 112; *id., Vert. Zool. Sind,*

p. 185, *Sharpe, Cat. B. Br. Mus.* xii. p. 547; *Murray, Avif. Brit. Ind.* ii. p. 334, No. 869. Citrinella stewarti, *Hume, Nests and Eggs Ind. B.* p. 465.—The WHITECAPPED BUNTING.

*Male.*—Forehead and crown greyish white; lores and a broad supercilium extending to the nape black; chin and throat black; back, scapulars, rump, upper tail coverts, flanks, and a broad band across the chest reddish chestnut; the feathers of the back in some specimens with a mesial dark streak; cheeks and ear coverts white; breast, belly and under tail coverts greyish white or rufescent white; the under tail coverts with dark mesial streaks; wing coverts dark brown, edged with fulvous or buffy brown; primaries and secondaries pale brown, the primaries edged whitish, and the secondaries fulvous brown; tail dark brown, the outermost feather on each side white on the outer web; the shaft dark brown, the white of the inner web running obliquely from about one-fourth its length at the base; the next like the outermost, but with the outer web dark brown, and narrowly edged with white. The *female* is olive brown above, the feathers with dark mesial streaks; upper tail coverts tinged rufescent; under surface fulvous or buffy brown, the feathers mesially streaked with dark brown; bill and legs pale brown.

*Length.*—6 inches; wings 3 to 3·1; tail 2·75; tarsus 0·7.

*Hab.*—Sind, Punjab, N.-W. Provinces, N.-W. Himalayas, Beloochistan and Southern Afghanistan. Uncommon in Sind; occurs less abundantly in the Southern Districts during winter.

**12. Emberiza leucocephala**, *Gm., N. Comm. Acad. Sci. Imp. Petrov.* xv. p. 480, *tab.* xxiii. fig. 3; *Sharpe, Cat. B. Br. Mus* xii. p. 549; *Murray, Avif. Brit. Ind.* ii. p. 334, No. 870. Emberiza pithyornis *Gm., Syst. Nat.* p. 875; *Horsf. and Moore, Cat. B. E. I. Co. Mus.* ii. p. 482; *Blyth, Ibis,* 1868, p. 355; *Jerd., B. Ind.* ii. p. 370. Emberiza albida, *Blyth, J. A. S. B.* xviii. pl. 2.—The WHITE-CROWNED BUNTING.

Above cinnamon rufous, the back and mantle streaked with black; the hind neck and sides of the neck, also the lower back, rump and upper tail coverts unstreaked rufous; crown of the head white, bounded on either side by a broad black band; base of forehead washed with rufous; lores and eyebrow chesnut; chin, throat and a moustachial line rich vinous chesnut, middle of throat with a triangular patch of white; chest, sides of the body and flanks chestnut, the flanks narrowly streaked with black; breast, abdomen, thighs and under tail coverts white; median coverts rufous, their bases black and their margins whitish; the greater series blackish, edged with whity brown and tipped with whitish; bastard wing and primary coverts blackish; quills blackish, edged with ashy white; the secondaries edged with brown and the innermost rufous on their outer webs; tail feathers blackish, edged with whity brown, the penultimate one with a larger wedge-shaped mark of white at the tip of the inner web, which is much larger on the outermost feather and

entirely white on the outer web; axillaries and under wing coverts white, the latter with dusky bases; upper mandible dark brown, the lower one yellowish brown; feet pale yellowish; iris dark brown.

*Length.*—6 to 6·5 inches; wing 3·75; tail 3·15; tarsus 0·75; culmen 0·5.

*Hab.*—Siberia, extending to the Himalayas. Found in Cashmere, Mussoorie, Dehra Doon, Simla, and Quetta in Southern Afghanistan.

## Gen. **Galerida.**—*Bois.*

Bill lengthened, curved slightly; wings with the first primary partially developed, next four sub-equal; head crested.

**13. Galerida cristata** (*Linn.*), *Gould*, *B. Eur.* pl. 165; *P. E.* 503, i. *Naum. vogt.* t. 99, i.; *Jerd.*, *B. Ind.* ii. p. 437, No. 769; *Blf.*, *East Pers.* ii. p. 240; *Hume*, *Str. F.* i. 214; vii. p. 185; *Murray*, *Hbdk.*, *Zool.*, *&c.*, *Sind*, p. 191; *Murray*, *Avif. Brit. Ind.* ii. p. 360, No. 905.—The LARGE CRESTED LARK.

Head, nape, back, scapulars, rump and upper tail coverts pale sandy or pale rufous brown; the feathers of the crest, and in some specimens of the forehead also, with a mesial dark brown streak; the back and scapulars with dark shaft stripes; a pale fulvous streak from the nostrils to above the eye as a supercilium; lores pale fulvous or fulvous white, with, in some specimens, a faint dusky streak in the centre, in front of the eye; feathers below the eye whitish, followed by curved dusky line, then white, and followed by a dusky streak at the base of the lower mandible on each side; chin, throat, sides of the neck and breast white; abdomen, flanks, and under tail coverts sullied white; breast with longitudinal streaks or oval spots; ear coverts pale brown; wings pale brown; the wing coverts edged and tipped pale rufous, also the primaries, secondaries and tertiaries, and all with a broad rufous or pale salmon margin on their inner web, the under wing coverts and wing lining being of this hue; tail dusky or dark brown, the centre feathers broadly margined with rufescent, or mixed rufescent and dusky, the outermost feather on each side rufescent, or rufescent white, except a dusky wash on the inner web; the next margined with rufescent white on the outer web, forming a tip of the same colour, and running up and forming a very narrow edge on the inner web for one-half the length of the feathers (this is not constant), rest of the tail feathers very narrowly tipped with rufescent white. Bill yellowish dusky on the ridge of the upper mandible; legs pale brown; irides dark brown.

*Length.*—7 to 7·5 inches; wing 3·75 to 4·25; tail 2·25 to 2·75; bill at front 0·75.

*Hab*—Universally distributed from sea level to nearly 8,000 feet above the sea; S.-E. Europe, Asia, Africa, throughout India, Persia, Beloochistan, and Afghanistan. Like *A. gulgula* it rises in the air to a great height, soaring up to the sun often so high that the eye cannot follow it, all the while singing,

as it advances higher, as if springing up into the higher regions. This is chiefly noticed during the breeding season (April and May). It however descends rapidly, but continues its song till within a few feet of the ground. As remarked by Mr. Hume, this species is variable in size and colouration, so much so, that at least half-a-dozen species have been made by Franklin, Sykes, Jerdon and Blyth. "The examination of a large series," Mr. Hume says, "proves that it is impossible to draw a line anywhere between the largest and the smallest examples. A perfect series of the wings occurs, and as for the difference in tone of plumage, big and little examples are alike met with amongst the brown, rufous, sandy, grey or desert colour types." All the varieties are netted in great numbers, and brought for sale in the markets, as Ortolan. The flesh is delicious, and quite equal to that of the true Ortolan and other species of *Emberiza*.

## SECTION.—OSCINES CULTIROSTRES.

### Family.—STURNIDÆ.—Starlings.

Bill straight or very slightly curved, rather long pointed and compressed, often angulated at the base, the tip entire or slightly notched; wings long and pointed; tail moderate; tarsus strong; nostrils on each side covered with feathers. They walk freely on the ground, fly well, are gregarious, and live on fruit, insects, and grain. They nidificate under the eaves of roofs or in holes of trees. Some are intelligent and are caged, and taught to utter long and amusing sentences. The Indian species may be said to be divided into Starlings and Mynahs; Glossy Mynahs or Grakles.

In the present work, it is with the first (starlings) only we have to deal. They arrive during winter in large flocks, and at this time are exceedingly plump and fat, and make excellent *fricassé*; and with proper seasoning stew and pie; especially with beef steak starlings go well. When jungling during winter, and beefsteaks and the dry, stringy "moorghi" is not obtainable, the usual method is, when you have brought down a dozen starlings, and got a hare or two, to pluck and nicely clean the starlings, and inside each put some *pate de fois gras*, and if at hand a thin slice of ham or bacon, then add the hare cut up into quarters, anything in the way of truffles or mushrooms, or in their absence hard-boiled eggs, condiments and sauces, and you will find that with a good crust over the whole, and properly baked, starlings are not to be despised. Where good flour is not obtainable, the above method will afford an excellent stew.

### Sub-Family.—STURNINÆ.

Bill with the sides compressed, tip rather blunt and flattened; wings long and pointed; tail rather short; tarsi strong, scutate in front; toes long and strong.

## Gen. **Sturnus.**—*Linn.*

Bill sharp, straight, and with a conical groove; nostrils feathered; 2nd quill longest.

Sturnus vulgaris.

**14. Sturnus vulgaris**, (*Lin.*), *Gould, B. Eur.* pl. 210; *P. E.* 76; *Naum. vogt.* t. 62; *Jerd., B. Ind.* ii. p. 321, No. 681; *Murray, Vert. Zool, Sind*, p. 178; *id., Zool. Bel. and Afgh.*; *Murray, Avif. Brit. Ind.* ii. p. 363, No. 907.—The Common Starling.

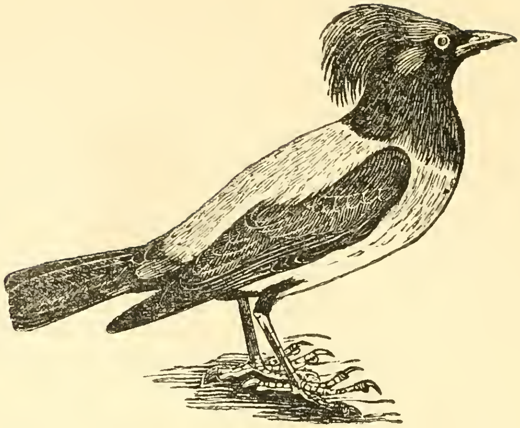
Head, neck, nape, chin, throat, breast and back black, glossed with purple, bronze, and green in different lights, the latter predominating on the head and neck, each feather tipped with a small brownish white triangular or round spot, which, in very old birds, wear out on the head and neck chiefly. Greater and lesser wing coverts dusky, edged with pale reddish brown; primaries, secondaries and tertiaries also dusky, their outer webs glossed green, margined with light reddish brown; tail short, dusky, their outer webs more or less glossed with green and edged with pale reddish brown or buffish; under tail coverts black, edged with white. Bill black; legs dark brownish red.

*Length.*—9 inches; wing 5; tail 3; bill at front 1·25.

*Hab.*—Europe, Asia, and India generally during winter, to the Himalayas. More common in Sind and the North-West Provinces, associating in large flocks. It is said by Theobald to breed in Cashmere. Eggs, 4—6, pale bluish green. See remarks under the head Sturnidæ on opposite page.

## Gen. **Pastor.**—*Tem.*

Bill short, compressed, curving from the base, slightly deflected at the tip; grove of nostril clothed with short plumes; 2nd qulll longest; 1st spurious; tarsus scutate; tail even; head with an occipital crest.



Pastor roseus.

15. **Pastor roseus** (*Lin.*), *Gould, Birds of Eur.* pl. 212; *Naum. vogt.* t. 63; *Jerd., B. Ind.* ii. p. 333, No. 690; *Blf., East. Persia* ii. p. 267; *Str. F.* i. p. 208; iii. pp. 208, 495; *Murray, Hdbk., Zool., &c., Sind*, p. 176; *Murray, Vert. Zool., Sind*; *Murray's Avif. Brit. Ind.* ii. p. 372, No. 925. —The Rose-coloured Pastor.

Head, crest, crown, neck on the back and nape black, glossed with bluish purple; chin and throat black; entire back, breast, rump and upper tail coverts pale salmon or delicate rose colour; wing coverts black, the lesser series margined with grey, and the greater series glossy black with purple reflections; primaries dark brown, tinged with greenish; some of the secondaries glossy black, also with green reflections, and others only so on the outer web; tail greenish black; under tail coverts black. Bill yellowish rose; legs yellowish brown; irides deep brown.

*Length.*—9 to 9·5 inches; wing 5·25; tail 3; bill at front 0·8.

*Hab.*—S.-E. Europe, Asia Minor, India, Ceylon and Assam. In the Deccan and the Carnatic they arrive about November, and it is about this time they come in throughout Western India. A winter visitant in most parts of India; arrives in Sind about the beginning of April in large flocks; in the Punjab and W.-N. Provinces in August. Occurs also as a migrant in Beloochistan, Persia, Afghanistan and Eastern Turkistan. They are very voracious feeders, and commit great havoc among the jowaree and bajree crops, and in fact corn of any kind, flower buds, and small fruits, as mulberries, capers, &c. The Pastor forms excellent flesh food. The remarks under the heading Sturnidæ apply also to the Pastor.

## **ORDER,** GEMITORES—Pigeons and Doves.

Bill short, straight, compressed, front half of mandible vaulted and curved at the tip, the base with a soft fleshy membrane, in which are the nostrils; wings moderate or long; tail variable, of 12, 14, or 16 feathers, even or rounded; tarsi strong. Habits monogamous. Both sexes assist in making the nest, incubating the eggs, and feeding the young. Nests loosely constructed of twigs, straw, and almost any material which could be readily got and built on trees, roof of buildings or ledges and holes in rocks; eggs two in number, white. They feed on fruit and grain, and in feeding the young disgorge the food from their craw.

All Pigeons and Doves are excellent food, and especially the nearly full-grown young of the former, which like the adults make good pie and stew. Adult pigeons however need skinning if required for the table within six hours. If kept above this space of time, properly eviscerated, skinning need not be resorted to. To the Treronidæ, Columbidæ, and Turturinæ also, these remarks apply. Leaving out the Ortolans and perhaps the Jowaree Birds (*Pastor roseus*), and *Sturnus vulgaris* there is nothing I believe so nice and tender as the Doves. In fact all the members of the Order *Gemitores* require a *connoisseur* to estimate their value as flesh food after having left a good *cuisine*. One important fact remains to be added, and that is, while Ortolans, Pastors, Starlings, and most game birds can only be had at certains seasons, Pigeons and Doves are resident with us throughout the year, and are found in immense numbers. The following are all the species known in India, and used as food.

### **Family,** TRERONIDÆ—Fruit Pigeons.

Bill variable, short, thick, or slender; tip vaulted; tail of 14 feathers; tarsi more or less feathered, the bare portion reticulated.

#### Gen. **Treron.**—*Vieill.*

Bill strong and deep; eyes surrounded by a nude space.

**16. Treron nipalensis** (*Hodgs.*), *Jerd.*, *B. Ind.* ii. p. 445, No. 771; *Hume*, *Str. F.* iii. p. 160; *Blyth and Wald.*, *B. Burm.* p. 163; *Hume and Dav.*, *Str. F.* vi. p. 410; *Hume*, *Str. F.* viii. p. 109; *Bingham*, *Str. F.* ix. p. 193; *Oates*, *Str. F.* x. 235; *id.*, *B. Br. Burm.* ii. p. 306. *Murray*, *Avif. Br. Ind.* ii. p. 497, No. 1140.—The Thick-billed Green Pigeon.

Head and nape ashy, paler on the crown and tinged with greenish on the nape; rest of the plumage bright green, except the back, scapulars, and most of the wing coverts, which are maroon; other coverts and tertiaries green, the median series broadly edged with yellow; greater coverts blackish, edged with yellow; primaries and their coverts black, the latter narrowly edged with white; secondaries black, edged externally with yellow;

central feathers of the tail green, the next pair greenish with ashy tips, the rest of tail feathers ashy, tinged with green on the outer webs, and with a black bar across; under tail coverts cinnamon brown. The *female* differs in wanting the ashy head and maroon mantle. Bill red at base; the culmen yellowish; corneous portion bluish white; eyelids greenish blue; irides blue; legs bright red; corneous portion of bill extending to the forehead.

*Length.*—10·5 to 10·8 inches; tail 3·5; wing 5·5 to 5·7; tarsus 0·9; bill from gape 0·95.

*Hab.*—The hill tracts of Eastern Bengal and S.-E. Himalayas, the hilly parts of Burmah, extending down the Malay Peninsula to Sumatra; also Siam and Cochin-China. Found in flocks; feeds on fruits. Breeds in March. Eggs 2, pure white.

### Gen. **Crocopus**.—*Bonap.*

Characters those of the Sub-Family; basal portion of bill with the fleshy protuberance occupying one-half its length or nearly as much; third primary sinuated on its inner web.

**17. Crocopus phœnicopterus** (*Lath.*), *Jerd.*, *B. Ind.* ii. p. 447, No. 772; *Hume*, *Str. F.* ii. p. 423. Crocopus Hardwickii, *Gould*, *Cent. Him. B.* pl. 58; *Murray*, *Avif. Brit. Ind.* ii. p. 498, No. 1141.—The Bengal Green Pigeon.

Top of head and demicollar ashy grey; back of the neck yellowish green; forehead tinged with greenish; wing coverts lilac, the greater series margined yellow, forming an oblique bar across the wing; tail ashy grey above, and for the terminal two-fifths tinged with green; middle portion blackish; neck in front and breast bright yellow green; middle of abdomen ashy grey; vent white and green; lower abdomen bright yellowish green; under tail coverts dull maroon, and with white tips; bill whitish; feet yellow; irides carmine; eyelids smalt blue.

*Length.*—12·5 inches; tail 5; wing 7·5; bill at gape 0·9.

*Hab.*—Bengal and Upper India, extending to Assam, Sylhet and Tipperah. Found in the Eastern portions of Rajpootana, the Punjab, Central and N.-W. Provinces and Oudh; also in Central India. Breeds from March to June, on trees. Eggs two in number, of an oval shape, white and glossy, varying in length from 1·16 to 1·35 inch, and in breadth from 0·9 to 1 inch.

**18. Crocopus chlorigaster**, *Blyth*, *J. A. S. B.* xvii. p. 167; *Jerd.*, iii. p. 448, No. 773; *Str. F.* ii. p. 423; *Murray*, *Hdbk., Zool. &c., Sind*, p. 193; *id. Vert. Zool. Sind*, p. 200; *Tem. Pig.* t. 2. C. jerdoni, *Strickl*, *Murray*, *Avif. Brit. Ind.* ii. p. 498, No. 1142.—The Southern Green Pigeon.

Forehead, crown and nape ashy grey, as also are the lores, sides of the face and ear coverts; neck behind yellowish green, followed on the upper back by a narrow band of ashy grey; back, scapulars, rump and upper tail coverts green, slightly tinged with yellowish on the scapulars; primaries dusky brown, margined on their outer web with pale yellow; the wing coverts broadly margined with the same colour, forming an oblique wing bar; shoulder of wing lilac; tail above greenish at base and ashy grey for the terminal half; under tail coverts dull maroon, the feathers broadly tipped with white; chin and throat greenish yellow; neck in front, breast and abdomen bright yellow, tinged greenish on the flanks; vent mixed green and white; bill whitish; legs and feet yellow; irides carmine.

*Length.*—11·75 to 12·5 inches; wing 7; tail 5; bill at front 0·75.

*Hab.*—Nearly throughout the Peninsula of India and Ceylon (*Jerd.*), Malabar Coast, Madras and Southern India generally; Lower Bengal, Oudh, Central Provinces, Khandeish, the Deccan, Sind, and North Guzerat. Rare in Sind, and has only been found on the frontier, at Jacobabad. Breeds from March to June, nesting on trees. Eggs two in number, pure white and glossy, 1·12 to 1·3 a length by 0·9 to 1·0 in breadth.

**19. Crocopus viridifrons** (*Blyth*), *Hume, Str. F.* iii. p. 161; *Blyth, B. Burm.* p. 143; *Oates, Str. F.* v. p. 163; *Anders., Yunnan Exped.* p. 664; *Hume and Dav., Str. F.* vi. p. 410; *Hume, Str. F.* viii. p. 109; *Bingham, Str. F.* ix. p. 194; *Oates, Str. F.* x. p. 235; *id., B. Br. Burm.* ii. p. 307; *Murray, Avif. Brit. Ind.* ii. p. 499, No. 1143.—The Yellow-fronted Green Pigeon.

Lores, *forehead*, cheeks, throat, breast, sides and back of the neck and thighs deep yellow; ear coverts, crown, nape, and a band across the nape ashy; also the abdomen, sides of the body and under wing coverts; vent mixed yellow and ashy; under tail coverts maroon, tipped with white; back, scapulars, tertiaries, rump and lesser wing coverts dull green, a patch of lilac near the bend of the wing; winglet and primary coverts dark brown; quills dark brown, edged with yellow; greater coverts dark brown, broadly edged with yellow; *basal half of tail greenish yellow;* terminal half of tail and upper tail coverts ashy. (*Oates.*) Irides blue, the outer circle pink; eyelids plumbeous; legs orange yellow.

*Length.*—12·5 to 12·8 inches; tail 4·7; wing 7·5; tarsus 1·1; bill from gape 1.

*Hab.*—British Burmah, where it is said to be extremely common, and spread over the whole Province alike in the hills and plains. It extends through the Indo-Burmese countries to Cachar, and eastwards to Cochin-China. Breeds in April. Nest placed in low trees. Eggs white, two in number.

## *Gen.* Osmotreron—*Bonap.*

General characters as in *Crocopus;* bill more slender; legs red; sexes differ much in plumage.

**20. Osmotreron bicincta,** *Jerd., B. Ind.* ii. p. 449; *Hume, Nests and Eggs Ind. B.* p. 493; *Blyth and Wald., B. Burm.* p. 144; *Armstrong, Str. F.* iv. p. 337; *Oates, Str. F.* vi. p. 163; *Hume and Dav., Str. F.* vi. p. 411; *Hume, Str. F.* viii. p. 109; *Legge, B. Ceylon* p. 725; *Oates, Str. F.* x. p. 235; *id., B. Br. Burm.* ii. p. 308; *Murray, Avif. Brit. Ind.* ii. p. 500, No. 1144.—The Orange-breasted Green Pigeon.

Upper surface of the body, including the lesser wing coverts, tertiaries and greater wing coverts green, the two latter broadly edged on the external web with yellow; winglet, primaries, and the primary coverts black; secondaries also black, narrowly margined with yellow; occipital region, nape, hind neck, under wing coverts, axillaries, sides of the body, and central tail feathers ashy; other tail feathers dark ashy, all tipped with greyish white; forehead, front of crown, sides of the head and neck, chin, throat, abdomen, and vent yellowish green; flanks yellow, streaked with dark green; breast orange, separated from the neck by a lilac band across, forming a collar; under tail coverts cinnamon. The *female* has not the lilac and orange breast, and the under tail coverts are pale ashy white, dashed with dull greenish; bill glaucous green; legs pinkish red; irides blue, with an outer circle of red.

*Length.*—12 inches; tail 4·2; wing 6·3; tarsus 0·8; bill from gape 1.

*Hab.*—The more moist and wooded portions of India and Ceylon, and also in the greater part of British Burmah. Extends to Assam, Cachar, and countries to the eastward. Recorded from Lower Bengal and the coasts east and west of India. Occurs abundantly in Nepaul, Sylhet, Tipperah, and Arrakan; also the Sub-Himalayan terais of Behar and Oudh, and the Eastern forest regions of the Central Provinces. Breeds in the Nepaul terai from April to June, making a nest generally on the outer branch of a tree. Eggs two in number, oval, and pure white.

**21. Osmotreron vernans** (*Linn.*), *Wald. Trans. Zool. Soc.* viii. p. 81; *Hume and Dav., Str. F.* vi. p. 411; *Hume, Str. F.* viii. p. 109; *Kelham, Ibis,* 1881, p. 526; *Oates, B. Br. Burm.* ii. p. 309. Columba vernans, *Linn., Mantissa Plant.* p. 526. Columba viridis, *Scop., Del. Flor. et Faun. Insub.* ii. p. 94. Osmotreron viridis, *Hume, Str. F.* i. p. 460. Treron vernans, *Salvad., Ucc. Born.* p. 286; *Murray, Avif. Brit. Ind.* ii. p. 500, No. 1145.—The Pink-necked Green Pigeon.

Forehead, crown, sides of the head, chin, throat, and sides of the body ashy; nape, hind neck, sides of the neck and breast vinaceous pink; lower breast orange; back, rump, scapulars, tertiaries and wing coverts green, the outer,

median and greater coverts and some of the tertiaries margined with yellow; quills blackish, very narrowly margined with yellow; upper tail coverts rufescent; abdomen greenish yellow; vent and flanks mixed green and yellow; under tail coverts deep chestnut; tail ashy, with a broad subterminal blackish band, and tipped with paler ashy. The *female* has not the vinaceous pink breast; and the whole head, neck, and breast are green; under tail coverts yellowish white, marked with cinnamon and dull ashy green; legs and feet carnation pink; bill pale plumbeous; cere dirty yellowish; irides Prussian blue, with pink and buff outer circles.

*Length.*—11 inches; tail 4; wing 5·7; tarsus 0·8; bill from gape 0·85.

*Hab.*—Southern Tenasserim, extending down the Malay Peninsula and eastwards to Cochin-China. Found also in Sumatra, Java, Borneo, Celebes and the Phillipine Islands. Breeds in the Malay Peninsula during March on bushes in swampy places.

**22. Osmotreron malabarica,** *Jerd., Ill. Ind. Orn.* pl. 31; *id., B. Ind.* ii. p. 450; *Hume, Nests and Eggs Ind. B.* p. 493; *Hume, Str. F.* iii. p. 162; *id., Str. F.* iv. p. 261; vi. p. 414; *Murray, Avif. Brit. Ind.* ii. p. 500, No. 1146.—The Grey-fronted or Malabar Green Pigeon.

Forehead greyish white; mantle and wing coverts maroon; rest of upper parts, including the lores, face and ear coverts green; wing coverts broadly edged with bright yellow; quills the same, but narrow; tail green, with a broad medial dark band and broadly tipped with ashy white; under surface of the body green; throat and neck yellowish; vent and thigh coverts mixed green and pale yellow; under tail coverts cinnamon. The *female* has not the maroon patch; bill glaucous green; legs and feet pinkish red; irides red, with an outer blue circle.

*Length.*—10·2 to 10·5 inches; tail 4; wing 5·75. No nude space round the eye.

*Hab.*—Wooded and hilly tracts of the Indian Peninsula; abundant in Malabar and South India, also in Central India and the Eastern ghauts. It is also found in Mysore and South Wynaad, as well as in the Assamboo hills.

Breeds during April. Eggs pure white, and Hume says, thickly studded with minute pores.

**23. Osmotreron Phayrii,** *Blyth, J. A. S. B.* xxxi. p. 344; *Jerd., B. Ind.* ii. p. 451, No. 776; *Hume, Str. F.* iii. p. 162; *Blyth, B. Burm.* p. 144; *Hume and Dav., Str. F.* vi. p. 412; *Hume, Str. F.* viii. p. 109; *Bingham, Str. F.* ix. p. 194; *Oates, Str. F.* x. p. 235; *Oates, Br. Burm.* ii. p. 310; *Murray, Avif. Brit. Ind.* p. 501, No. 1147.—Phayre's Green Pigeon.

Very like *Osmotreron malabarica*, differing only in having the entire cap ashy in both sexes; breast greenish, tinged with orange. The *female* has not

the orange breast, and the maroon of the male is replaced by green; the under tail coverts are mixed green, ashy and white; bill bluish; legs lake red; irides blue, with an outer pink circle.

*Length.*—11 to 11·5 inches; tail 4; wing 6·3; tarsus 0·9; bill from gape 1.

*Hab.*—Lower Bengal, Assam, Sylhet, and Burmah, where it occurs in all the hilly tracts of the province, as far as Tavoy, and extends to the east as far as Cochin-China.

24. **Osmotreron fulvicollis** (*Wagler*), *Hume and Dav.*, *Str. F.* vi. p. 413; *Hume*, *Str. F.* viii. p. 109; *Oates*, *B. Br. Burm.* ii. p. 311. Columba fulvicollis, *Wagl.*, *Syst. Av. Columba*, No. 8; *Wald.*, *Trans. Zool. Soc.* ix. p. 213. Treron fulvicollis, *Salvad.*, *Ucc. Born.*, p. 288; *Murray*, *Avif. Brit. Ind.* ii. p. 501, No. 1148.—The Ruddy Green Pigeon.

Entire head, neck and upper breast ruddy vinaceous, paling on the lower breast; abdomen green; vent and flanks ashy green and yellow; thighs bright yellow; rump ashy green; sides of the body greyish white; under tail coverts cinnamon; back, scapulars and lesser wing coverts maroon; upper tail coverts and central tail feathers dull green; others green at base with a subterminal dark band and tipped with pale ashy. Legs and feet purplish pink; bill deep red; irides buffy pink; orbital skin plumbeous green.

*Length.*—10·5 inches; tail 3·5; wing 5·5; tarsus 0·8; bill from gape 0·8.

*Hab.*—Tenasserim, in the extreme south, extending down the Malay Peninsula, and occurring in Sumatra, Borneo, and the Phillipines.

25. **Osmotreron pompadoura** (*Gmel.*), *Jerd.*, *B. Ind.* iii. p. 452, No. 777; *Hume*, *Str. F.* iii. p. 162; vi. p. 414. Osmotreron flavogularis, *Blyth*, *J. A. S. B.* xxvi. p. 225; *Murray*, *Avif. Brit. Ind.* ii. p. 502, No. 1149.—The Yellow-fronted Green Pigeon.

Like *Osmotreron malabarica*; differs in having a yellowish forehead, pure yellow throat, no buff patch on the breast, and the under tail coverts are green in both sexes, with broad whitish tips; bill glaucous green; irides red, with an outer blue circle.

*Length.*—10·5 inches; tail 4; wing 5·75.

*Hab.*—South India and Ceylon.

*Osmotreron chloroptera* is said to occur in the Andamans and Nicobar Islands.

### Gen. **Sphenocercus**.—*Gray*.

Bill moderately slender and lengthened, the basal two-thirds soft and tumid; corneous extremity feeble; a small wide space round the eyes; third primary not sinuated; tail with the central feathers much elongated and narrow; soles of feet slender.

**26. Sphenocercus sphenurus** (*Vigors*), *Jerd.*, *B. Ind.* ii. p 453; *Hume, Nests and Eggs Ind. B.* p. 494; *id.*, *Str. F.* iii. p. 163; *Wald. in Blyth's B. Burm.* p. 144; *Hume and Dav.*, *Str. F.* vi. p. 415; *Hume, Str. F.* vii. p. 109; *Scully, Str. F.* viii. p. 339; *Oates, Str. F.* x. p. 235; *id.*, *B. Br. Burm.* ii. p. 304. Vinago sphenurus, *Vigors*, *P. Z. S.*, 1831, p. 173; *Murray, Avif. Brit. Ind.* ii. p. 502, No. 1150.—The WEDGE-TAILED GREEN PIGEON or the KOKLA.

Plumage green, with a ruddy tinge on the head and breast; shoulder of wing and mantle maroon; wing coverts, tertiaries, back, rump and upper tail coverts dark dull green; upper back slaty green; quills dusky or dark brown; tail green, the outer feathers slate colour, and with a dark subterminal band; greater wing coverts and secondaries narrowly margined with yellow; under surface of the body green; part of the throat, and entire breast suffused with orange buff; vent and under tail coverts pale cinnamon. The *female* has not the orange buff colour on the breast, and the under tail coverts are mixed white and green; bill glaucous blue, albescent at the tip; irides blue, with an outer circle of red; orbital skin pale blue; legs coral red.

*Length.*—13 inches; tail 5·5; wing 7; bill at front 0·75.

*Hab.*—Himalayas, extending into Assam and Sylhet, ascending as high as from 4,000 to 8,000 feet. Found also in Pegu. Jerdon says it is common at Darjeeling, and that at Mussoorie they leave in October and return to breed in April. Nest made on trees, composed of twigs. Eggs two in number, pure white.

**27. Sphenocercus apicaudus** (*Hodgs.*), *Jerd.*, *B. Ind.* iii. p. 454; *Wald. in Blyth's B. Burm.* p. 144; *Hume and Dav.*, *Str. F.* vi. p. 415; *Hume, Str. F.* viii. p. 109. Treron apicauda, *Hodgs.*, *J. A. S. B.* xiv. p. 854; *Murray, Avif. Brit. Ind.* ii. p. 503, No. 1151.—The PIN-TAILED GREEN PIGEON.

Plumage green; crown of the head with a yellowish tinge; upper tail coverts and under surface of the body tinged with yellowish; primaries slate colour; wing with two narrow conspicuous yellow bars; breast tinged with russet; tail with the medial pair of feathers much elongated beyond the rest, green at the base and pale grey at the tips; the others grey with a medial dark bar. Bill glaucous blue; legs coral red; irides dark yellow.

*Length.*—15·5 to 16 inches; tail 6·5, to end of central pair 8·0; wing 6·5; tarsus 0·9; bill from gape 1.

*Hab.*—S.-E. Himalayas, in Nepaul and Sikkim; also British Burmah, in Tenasserim, extending to the hill ranges of Eastern Bengal and Assam. Habits not unlike other pigeons. Jerdon says its not unlike the last species, but its *coo* is less loud, musical and prolonged.

## Sub-Family CARPOPHAGINÆ.—Fruit Pigeons.

Bill longer than in *Treroninæ*, more slender and depressed at the base; the terminal third corneous; wings long; tail even or rounded, longer than in the *Treroninæ*; feet with broad soles; tarsus short and well feathered; under mandible feathered to nearly the tip. Breeds at high altitudes, and lays but one egg.

### Gen. Carpophaga.—*Selby*.

General characters of the sub-family; plumage above glossy metallic green or coppery brown.

**28. Carpophaga ænea** (*Linn.*), *Hume, Nests and Eggs Ind. B.* p. 496; *id., Str. F.* ii. p. 260; iii. p. 163; *Blyth, B. Burm.* p. 144; *Wald., Trans. Zool. Soc.* ix. p. 215; *Armstrong, Str. F.* iv. p. 337; *Inglis, Str. F.* v. p. 39; *Hume and Dav., Str. F.* vi. p. 416; *Hume, Str. F.* viii. p. 109; *Legge, B. Ceylon* p. 718; *Bingham, Str. F.* ix. p. 194; *Parker, Str.* F. ix. p. 481; *Oates, B. Br. Burm.* ii. p. 301. Columba ænea, *Linn., Syst. Nat.* I. p. 283. Columba sylvatica, *Tick., J. A. S. B.* iii. p. 581. Carpophaga sylvatica (*Tick.*), *Jerd., B. Ind.* ii. p. 455, No. 780; *Murray, Avif. Brit. Ind.* ii. p. 503, No. 1152.—The Imperial Green Pigeon.

Whole head and neck and entire under parts pearl grey, tinged with ruddy vinaceous; under tail coverts deep maroon; orbital feathers, base of bill and chin whitish; back, rump, upper tail coverts, tertiaries, upper wing coverts and tail shining coppery green; axillaries buff; primaries and secondaries greenish brown, tinged with ashy on the outer webs. Bill greyish, the base dull red; eyelids, legs, and feet lake red.

*Length.*—17 inches; tail 6·5; wing 9; tarsus 1·1; bill from gape 1·5.

*Hab.*—The whole of India, from Ceylon to Assam and Sylhet, except the North-West Provinces and the Himalayas. It is also found in Burmah, and extends through the Malay Peninsula to Sumatra and Java. Affects forests and well-wooded parts of the country. Abundant in the Malabar forests, in Central and Southern India, Midnapore and the countries to the north-east generally. Breeds in the Andamans and in Tenasserim; also in the forests of Central India, laying only a single egg in a nest made of twigs in thickets and bamboo bushes. March and April are the months in which it breeds. The eggs of this species are much sought after in Southern India and Ceylon for the purpose of making a peculiar lamp black used by the upper classes of Malabarese and Cingalese ladies for painting the inner eyelids with and darkening the eyebrow. This is said to keep off the evil eye or *nuzzur*, equal, it is believed, to covetousness. To the flesh of the young in Yunani medicine, like that of young crows, is attributed aphrodisaic properties.

**29. Carpophaga insignis** (*Hodgs.*), *Jerd.*, *B. Ind.* ii. p. 457, No. 781; *Hume, Nests and Eggs Ind. B.* p. 496; *id.*, *Str. F.* iii. p. 328; *Murray, Avif. Brit. Ind.* ii. p. 504, No. 1153.—The BRONZE-BACKED IMPERIAL PIGEON.

Whole head, neck and under parts pale lilac grey; back and wings vinaceous brown with a faint coppery gloss; rump and upper tail coverts dusky cinereous; tail dusky with its terminal fourth dull ashy, the tip beneath whitish grey; chin white; under tail coverts buffy white; bill dull lake red at base, slaty at tip; orbits lake red; irides red-brown and hoary grey; legs dull lake red.

*Length.*—18 to 20 inches; tail 6·8 to 7; wing 9·5; tarsus 1; bill from gape 1·4. (*Jerd.*)

*Hab.*—S.-E. Himalayas; also the Khasia hills, Sikkim and Arrakan. Jerdon adds that it is found in the mountain regions of Malabar, in Coorg, the Wynaad, and the Western slopes of the Neilgherries. Associates in small parties or in pairs, frequenting the loftiest trees and feeding on various fruits. According to Hodgson it breeds in Nepaul from May to July, laying a single white egg.

**30. Carpophaga griseicapilla** (*Wald.*), *Dav.*, *Str. F.* v. p. 460; *Hume and Dav.*, *Str. F.* vi. p. 418; *Hume*, *Str. F.* viii. p. 109; *Oates*, *B. Br. Burm.* ii. p. 302. Ducula griseicapilla, *Wald.*, *Ann. Nat. Hist. Ser.* iv. xvi., p. 228; *id.*, *Ibis*, 1875, p. 459; *Hume*, *Str. F.* iii. p. 402; *Wardlaw-Ramsay*, *Ibis*, 1877, p. 467. Carpophaga insignis, *apud. Bl. B. Burm.* p. 144; *Murray*, *Avif. Brit. Ind.* ii. p. 504, No. 1154.—The GREY-HEADED IMPERIAL PIGEON.

Forehead, crown, nape, cheeks and ear coverts pure French grey; back of neck vinous; interscapulary region brown, with a vinous tinge; wing coverts brown like the back, but not so strongly tinged with vinous; quills dark brown; uropygium and upper tail coverts dark ash; rectrices above dark brown, with a broad grey terminal band; lower surface of rectrices pale grey; chin and throat pure white; remainder of lower surface pale grey, the breast being tinged with lilac; under tail coverts pale cream colour (*Walden*, ex *Oates*); legs and feet deep lake pink; bill the same but the corneous portion pale whity brown; irides pearly grey. (*Davison.*)

*Length.*—18·5 inches; tail 8; wing 9·5; tarsus 1·1; bill from gape 1·6.

*Hab.*—British Burmah on the Karen hills, east of Tounghoo, at from 4,000 to 4,200 feet elevation, also the Mooleyit mountain. Breeds in January.

**31. Carpophaga bicolor** (*Scop.*), *Ball*, *Str. F.* i. p. 79; *Hume, Nests and Eggs Ind. B.* p. 496; *id.*, *Str. F.* ii. p. 264; *Salvad.*, *Ucc. Born.* p. 292; *Blyth*, *B. Burm.* p. 145; *Hume and Dav.*, *Str. F.* vi. p. 418; *Hume*, *Str. F.* viii. p. 109. Columba bicolor, *Scop.*, *Del. Flor. et Faun. Insub.* ii.

p. 94. Myristicivora tricolor, *Wald.*, *Trans. Zool. Soc.* ix. p. 217; *Murray*, *Avif. Brit. Ind.* ii. p. 505, No. 1155.—The Red Imperial Pigeon.

Winglet, primaries and secondaries black; terminal portion of tail black, the black occupying about half the feather on the centrals, decreasing in extent towards the outer feathers, and on the outermost pair, occupying merely a small portion of the tip and the outer web; remainder of the plumage white, with a creamy or yellow tinge (*Oates*); legs and feet pale smalt blue; bill leaden blue; tip darkish horny or dark plumbeous; irides dark brown. (*Davison.*)

*Length.*—16 inches; tail 5; wing 9; tarsus 1·2; bill from gape 1·3.

*Hab.*—Mergui Archipelago, according to Blyth. Occurs in the Nicobars and probably also in the Andamans with *C. insularis*, a large species with darker plumage than *C. ænea*, and the under tail coverts dingy brown tinged with chestnut, and the tail blue black. *C. palumboides* also occurs in the Andamans; it is characterized by having blackish wings and tail, and dusky slaty blue plumage.

## Family—COLUMBIDÆ—*Bp.*—Pigeons and Doves.

Bill horny at apex only; tail generally of 12 feathers only; tarsus lengthened; plumage sombre; feet more fitted for walking on the ground. Breeds in holes of rocks, buildings or wells.

### Sub-Family—PALUMBINÆ.—Wood Pigeons.

General characters of the family.

### Gen. Palumbus.—*Linn.*

Characters those of the sub-family; the distinguishing feature is the patch on each side of the neck.

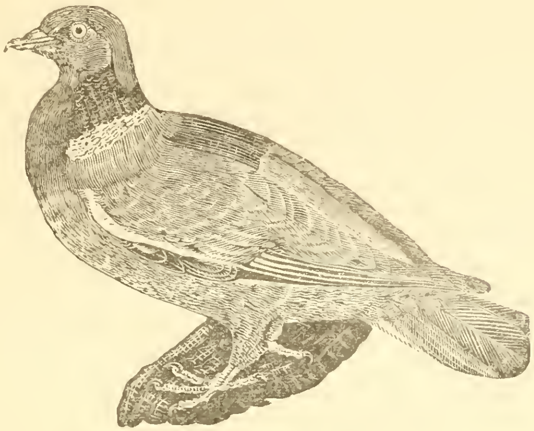
**32. Palumbus pulchricollis**, *Hodgs.*, *J. A. S. B.* xiv. p. 866; *Gould*, *B. Asia* pt. vi. pl. 13; *Jerd.*, *B. Ind.* ii. p. 465, No. 785; *Murray*, *Avif. Brit. Ind.* ii. p. 505, No. 1156.—The Darjeeling Wood Pigeon.

Above, general colour dusky grey; head, cheeks, and ear coverts light ashy; sides of the neck glossed with green and purple; neck patch black at base and with broad isabelline tips, followed by whitish at the extreme tip; tail blackish; under surface of the body pale vinous dove grey, albescent towards the vent and under tail coverts; throat whitish; breast glossed with green and purple. Bill livid at base, the tip yellow; irides yellow; legs dull red.

*Length.*—13·5 to 14 inches; tail 4·75 to 5; wing 8·5 to 9.

*Hab.*—S.-E. Himalayas, in Nepaul and Sikkim. Not very common at Darjeeling.

**33. Palumbus casiotis**, *Bonap., Ic. Pig.* t. 58; *Jerdon, Birds of Ind.* iii. p. 464, No. 784; *Murray, Hdbk., Zool., &c., Sind*, p. 193; *Murray, Avif. Brit. Ind.* ii. p. 506, No. 1157.—The HIMALAYAN CUSHAT.



Palumbus casiotis.

Head, lores, sides of the face, chin and throat bluish ashy; nape, hind neck and sides of the neck glossed green and purple, the latter predominating on the upper back and sides of the breast; neck patch on each side pure fulvous or yellowish clay; scapulars and tertials dusky or hair brown, lighter on the latter; breast dull lilac or ruddy vinaceous, paling on the upper abdomen to a vinous ash; lower abdomen, vent and under tail coverts ashy white; rump bluish ash; primaries and their coverts dusky, nearly dark brown; the primaries and some of their hindmost coverts margined with white on their exterior web; secondaries bluish ash, the tips dusky; wing coverts dark ashy; the lower series white on their outer web, and forming a longitudinal patch; winglet dark brown; tail dark ashy grey at the base, followed by a broad light ashy grey band, and a broad black tip; the under surface much darker, and the central band nearly white; bill orange at the tip, whitish at the base; legs red.

*Length.*—17 inches; wing 10·25 to 10·5; tail 7.

*Hab.*—This, the largest of the pigeon tribe, is found in Nepaul, N.-W. Himalayas, Sind, Punjab, Persia, Beloochistan, and S. Afghanistan. Found in Sind on the frontier only, at Jacobabad. Breeds as far as has yet been ascertained only in the extreme N.-W. Himalayas, and Hume adds, perhaps also in the higher fir forests below the snow range in the Western Himalayas. They remain about Simla, Almorah and Mussoorie from November to April, and then are found in forests between the Jumna and the Ganges. Like all

others of its tribe it feeds on berries, wild fruits or cherries, grass seeds and corn of all kinds. The flesh is delicious, but like all pigeons though unless skinned or made up into stew or pie, roasted, it is dry, and there is scarcely any flavour. Curried there is nothing better. These remarks apply to all the following pigeons.

**34. Palumbus Elphinstonei** (*Sykes*), *Jerd.*, *B. Ind.* ii. p. 465, No. 786; *id.*, *Ill. Ind. Orn.* pl. 48; *Gould*, *B. Asia* pt. vi. pl. 12; *Hume*, *Str. F.* vii. pp 95, 424. Palumbus torringtoni (*Kelaart*), *Blyth*, *Ibis*, 1867; *Hume*, *Str. F.* vii. p. 424.—The NEILGHERRY WOOD PIGEON.

Head and neck ashy; nuchal patch black, with small *white tips*; back of neck and interscapulars cupreous ruddy, slightly glossed with greenish; rest of upper surface of body ruddy brown, dark ashy on the rump and upper tail coverts; wings, including the quills, dusky black, narrowly edged with ruddy cupreous; outer primaries pale edged; tail dull black; under surface of the body ashy, albescent on the throat; neck and breast glossed with green; vent and lower abdomen albescent; bill deep red, tipped with yellow; legs and feet dull red.

*Length.*—15 to 16 inches; tail 5·75 to 6; wing 8 to 8·25.

*Hab.*—The Neilgherries, Ceylon, and the dense woods above the Khandalla ghauts in the Deccan. Breeds from March to July, laying only a single egg. Nests placed on high trees in dense woods. Egg spotless glossy white, oval, 1·46 × 1·2.

### Gen. Palumbæna.—*Bp.*

Bill straight, compressed, convex, bent at the tip; base of upper mandible covered with soft skin, more or less inflated, in which are the nostrils; hind toe on the same plane with the front ones; wings ample; 1st quill shorter than the second, which is the longest.

Feet fitted for walking, as well as for perching; habits and colouring intermediate to *Palumbus* and *Columba.* (Jerd.)

**35. Palumbæna Eversmanni**, *Bp.*, *Ic. Pig.* t. 61; *Jerd.*, *B. Ind.* iii. p. 467, No. 787; *Hume*, *Str. F.* i. p. 217; *Murray*, *Hdbk.*, *Zool.*, *&c.*, *Sind*, p. 193.—The INDIAN STOCK PIGEON.

Dark ashy, with a whitish grey rump; crown and breast tinged with vinaceous, two or three black spots on the wings, forming the rudiments of bands, and the end of the tail black; its outermost feather white for the basal two-thirds of its exterior web, or showing a black, and then a narrow grey band towards its tip; beneath the wings whitish, where it is dark ashy in the Euro-

pean bird. Bill yellowish translucent; legs with a yellowish tinge; skin round the eye yellow; irides buff.

*Length.*—11·5 inches; expanse 24; wing 8; tail 4. (*Jerdon.*) I have only a single specimen of this species from Shikarpoor, in Sind, and in a very unsatisfactory state for describing. Jerdon says this species is found in Western and Central India, and is probably migratory.

## Gen. Columba.—*Linn.*

Characters same as those of *Palumbœna.*

**36. Columba intermedia,** *Strickl., Ann. Nat. Hist. Ser.* I. xiii. p. 39; *Jerd., B. Ind.* ii. p. 469, No. 788; *Hume, Nests and Eggs Ind. B.* p. 499; *David et. Oust. Ois. Chine,* p. 384; *Hume and Dav., Str. F.* vii. p. 449; *Hume, Str. F.* viii. p. 109; *Scully, Str. F.* viii. p. 339; *Legge, B. Ceylon* p. 698; *Blf., East Pers.* p. 268; *Murray, Vert. Zool. Sind,* p. 202. Columba livia, *apud. Bl. B. Burm.,* p. 145.—The Indian Blue Rock Pigeon.

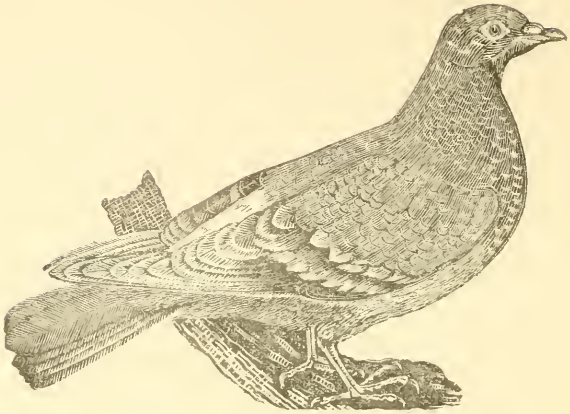
Head, nape, chin, abdomen, vent and upper and under tail coverts dark slaty grey; back, scapulars, secondaries, tertials, inner webs of primaries and rump pale ashy, paler on the rump; the outer webs of the primaries dusky grey, as are also their tips; secondaries broadly tipped dusky, the innermost tertials and greater wing coverts with a subterminal black patch on the outer web only, forming two black wing bands; neck all round and breast glossy, changeable green and amethystine, in varying lights; throat also slightly tinged with glossy green; under wing coverts white; tail like the upper tail coverts, or a little paler for two-thirds its length, then broadly black, with a very narrow terminal ashy tip; the basal two-thirds or more of the outer web of the outermost feather white. Bill black; cere whitish; irides dull orange; legs pinkish red.

*Length.*—12 to 13 inches; wing $8\frac{3}{4}$ to 9; tail 5; bill at front 0·75.

*Hab.*—Throughout India to Ceylon, the Himalayas, Assam, Burmah, Persia, Beloochistan and Afghanistan in great abundance, congregating in large flocks. Breeds throughout India. Nesting in mosques, tombs, buildings, walls, and in holes in rocks, and caverns. Eggs 2 in number, white and glossy, 1·2 × 1·25. This with the next are the pigeons which with their young are brought to the market in immense numbers and are purchased largely for making pie. The flesh is more tender than those of the preceding, excellent, mixed brown and white, succulent and as tasty as that of any Quail. The upper layer of flesh on the breast is a little darker than the lower, and is about the most succulent part if properly cooked.

**37. Columba livia,** *Bp., Ic.* t. 62; *Bodd., Pig. Pl. Enl.* 510; *Naum. vogt.* t. 150; *Tem. Pig.* t. 12; *Gould, B. Eur.* pl. 245; *Gray, Handlist Birds,*

No. 9231; *Blf*, *East. Pers.* p. 268; *Hume, Str. F.* i. 218; vii. 296; *Murray, Hdbk. Zool., &c., Sind*, p. 193.—The Rock Dove.



Columba livia.

Differs from *C. intermedia* in having a *pure white* instead of an ash coloured rump.

*Hab.*—S.-E. Europe, Sind, Beloochistan, S. Persia, S. Afghanistan, Arrakan, and some parts of Burmah. Breeds in December, laying, like *intermedia*, two white eggs.

**38. Columba rupestris**, *Pall., Zoogr. Rosso. As.* pl. 25; *Jerd. B Ind.* iii. p. 470, No. 789. Columba livia, *apud Adams, B. Ind.*, No. 208. —The Blue Hill Pigeon.

Like *Columba intermedia*, but much paler in colour, the head and sides of the face being ashy grey instead of dark slaty grey; wing coverts and upper back light grey; middle of back white; upper tail coverts dark ashy grey; quills grey, black shafted and darker at the tips and on the outer webs; a patch of greyish black on the wing, forming two bands; tail dark grey at the base, broadly tipped with black and a subterminal broad white stripe; outer rectrices white, tipped with black; chin ashy grey; neck glossed with purple; upper breast glossed with green; bill black; cere grey; irides red.

*Length.*—12·7 inches; tail 5; wing 8.

*Hab.*—Kumaon and Mussoorie. Habits similar to those of the two preceding, is much prized with the next for the table; found in as considerable number as the Blue Rock.

**39. Columba leuconota**, *Vigors, P. Z. S.* 1831, p. 331; *Gould, Cent. Him. B.* pl. 59; *Jerd., B. Ind.* iii. p. 471, No. 790; *Hume, Str. F.* iii. p. 256.—The White-bellied or Imperial Rock Pigeon.

Crown of the head and ear coverts blackish ash; neck behind white; interscapulars light brownish grey; rump white; wings light brownish grey, paler on the median coverts; primaries dull blackish near the tips, the secondaries broadly tipped with dusky; tertiaries and their coverts tipped greyish white, and forming 3—4 conspicuous bars; upper tail coverts and tail ashy black, with a broad greyish white curved band, the points of which reach the tips of the outer feathers, which are basally white externally; bill black; irides yellow; legs red.

*Length.*—13·5 to 14 inches; tail 5; wing 9·5.

*Hab.*—N.-W. Himalayas from 10,000 feet to snow level. Habits similar to those of others of the genus.

### Gen. **Alsocomus**.—*Tick.*

Bill small, much compressed; wings long, 2nd quill equal to 4th, the 3rd longest and sinuate on the outer web.

**40. Alsocomus puniceus**, *Tickell, J. A. S. B.* xi. p. 462; *Jerd., B. Ind.* ii. p. 462, No. 782; *Blyth, B. Burm.* p. 145; *Wardlaw-Ramsay, Ibis*, 1877, p. 147; *Hume and Davison, Str. F.* vi. p. 418; *Legge, B. Ceylon*, p. 698; *Hume, Str. F.* viii. p. 109; *Oates, Str. F.* viii. p. 167; *Bingham, ibid.* p. 196; *Oates, Str. F.* x. p. 235; *Oates, B. Br. Burm.* ii. p. 289.—The Purple Wood Pigeon.

Whole plumage vinaceous ruddy, inclining to chestnut on the back and wings, the feathers more or less glossed with metallic green and amethystine, especially on the neck; head greyish white; quills blackish, edged slightly with ashy; rump and upper tail coverts dark ashy; tail black; under tail coverts brown; bill livid at base, yellow at tip; legs and feet lake pink; irides orange; orbital skin purplish pink.

*Length.*—14·8 to 15 inches; tail 6.; wing 8·5; tarsus 1; bill from gape 1·1.

*Hab.*—Tenasserim and Pegu, also in the Eastern portions of Central India, extending to near the sea coast in Midnapoor, and probably outwards towards Cuttack. It has been occasionally met with in Ceylon. To the east of the Bay of Bengal, in Assam, Arrakan, Singhboom and Tenasserim it is more common. Oates says it is sparingly distributed over many parts of Pegu, and that it is more abundant near Kyakpadien than elsewhere. It has also been procured at Tounghoo. Tonka, where Hume records it from, appears to be the southernmost point of its distribution. Eggs similar to those other of pigeons, and one in number only.

**41. Alsocomus Hodgsoni** (*Vigors*), *Jerd. B. Ind.* ii. p. 463, No. 783. Columba Hodgsoni, *Vigors, P. Z. S.* 1832. Dendrotreron Hodgsoni, *Hume, Nests and Eggs Ind. B.* p. 497.—The Speckled Wood Pigeon.

Above dark vinaceous ruddy, the median coverts speckled with white; rump and upper tail coverts dusky ash; tail ashy black; head and beneath the throat in front of the neck cinereous tinged with ruddy; nape vinous grey, the feathers minutely tipped with greyish white; wing coverts greyish; quills dusky brown, the first three primaries very narrowly margined externally with whitish, not however present in all specimens; under surface of the body vinous grey; the feathers of the neck, breast and upper abdomen mesially streaked with ruddy; lower abdomen dark vinous; flanks speckled with white; under tail coverts dusky ash; bill purplish black; irides hoary; orbital space livid; legs and feet blackish green in front, yellow behind.

*Length.*—15 inches; tail 6; wing 9 to 9·25; tarsus 1. The *female* has a duller tinge on the upper and lower parts.

*Hab.*—Himalayas to Nepaul, ranging in the latter to 10,000 feet. In Sikkim, Jerdon says, it keeps to the higher ranges only. It inhabits deep forests in the middle region of the Himalayas. It is not found on the outer range of hills in the North-West Himalayas, but is far from rare on the Tyne range and other mountains, in the interior, where Blyth was informed that it is tolerably common, frequenting the pine forests.

## **Sub-Family**—MACROPYGIINÆ.

Cuckoo doves with short feet, long and broad tails. The head too is small; wings rather short. Plumage ruddy brown.

### Gen. **Macropygia**.—*Swains.*

Bill long and slender; tail long, broad and much graduated; legs and feet fitted for perching; lateral toes somewhat unequal; soles flat; rump feathers more or less spinous.

**42. Macropygia leptogrammica** (*Temm.*), *Wald.*, *Ibis*, 1875, p. 439; *Oates*, *B. Br. Burm.* ii. p. 295. Columba leptogrammica, *Temm.*, *Pl. Col.* 560. Coccyzura tusalia, *Hodgs*, *J. A. S. B.* xii., p. 937. Macropygia tusalia, *Jerd.*, *B. Ind.* ii. p. 473, No. 791; *Hume*, *Nests and Eggs Ind. B.* p. 500; *Wald.*, *in Blyth's B. Burm.* p. 146; *Wardlaw-Ramsay*, *Ibis*, 1877, p. 468; *Hume and Dav.*, *Str. F.* vi. p. 419; *Hume*, *Str. F.* viii. p. 110.—The Bar-tailed Cuckoo Dove.

Forehead buff, with a vinous tinge; crown, nape and sides of the head vinaceous, glossed with changeable green and amethystine; hind neck also glossed the same; back, rump, upper tail coverts and scapulars, also tertiaries and wing coverts, dusky black, barred with numerous narrow deep rufous bars; central tail feathers black, barred with rufous; the next two pairs ashy at base and barred indistinctly with black and rufous at the end; the outermost feathers ashy, with a broad subterminal black band; outer web of the outermost

feathers whitish ; quills dark brown ; chin and throat buff, with a vinous tinge ; breast and sides of the neck vinous brown, with purple and green reflections, each feather with a concealed black bar and lilac tip ; abdomen, vent and under tail coverts buff ; sides of the body tinged with ashy. The female has the breast and upper abdomen barred with brown and the colours are less bright ; bill horny brown ; legs and feet dull lake red ; irides brown, with an outer pink circle ; orbital skin pale livid.

*Length.*—15 to 16 inches ; tail 7·5 ; wing 7·2 ; tarsus 0·9 ; bill from gape 1.

*Hab.*—S.-E. Himalayas, from Nepaul to Bhootan, extending to the Khasia hills. In Sikkim, according to Jerdon, it frequents the zone from 3000 to nearly 7000 feet. Hodgson says it lays in the Central forests of Nepaul in May and June. At Darjeeling, according to Theobald, during July. It also occurs along the hill tracts of Eastern Bengal ; in the north-eastern portion of Pegu on the Karin hills at 4000 feet elevation and on the Tounghoo hills at an altitude of 3500 feet. Oates adds, that Mr. Davison obtained it in Tenasserim on the Mooleyit mountain and at Kollidoo further north. They are shy birds and keep to thick forests, associating in small flocks. They breed on trees, making a nest of twigs and laying two eggs. Breeding season March and April. *Macropygia rufipennis*, Blyth, an allied species, is found in the Nicobar Islands. Nothing appears to have been noticed by late observers of *M. ruficeps*, Temm., a Javan species which Jerdon notices as occurring also in Tenasserim.

**43. Macropygia assimilis**, *Hume, Str. F.* ii. p. 441 ; *Wald. in Blyth's B. Burm.* p. 146 ; *Wardlaw-Ramsay, Ibis*, 1877, p. 468 ; *Hume and Dav., Str. F.* vi. p. 420 ; *Hume, Str. F.* viii. p. 110 ; *Oates, B. Br. Burm.* ii. p. 296.—The TENASSERIM CUCKOO DOVE.

Forehead and crown chestnut ; sides of the head and neck, also hind neck and back, minutely freckled with greyish white ; rump and upper tail coverts brown, suffused with rufous at the edges ; wing coverts, scapulars and tertiaries dark brown, tipped with chestnut ; quills dark brown ; chin and throat fulvous ; lower plumage rufous, blotched with black on the breast ; under wing coverts chestnut ; four central tail feathers brown, the others brown at the base and chestnut, with a subterminal dusky bar. (*Oates.*) Legs and feet dark brownish red ; bill pinkish red or pale purplish brown ; irides sometimes grey with an inner ring of blue or grey only, or pearly white ; orbital skin pale blue. (*Davison.*)

*Length.*—13 inches ; tail 6·5 ; wing 5·6 ; tarsus 0·7 ; bill from gape 0·9.

*Hab.*—Tenasserim on the Mooleyit mountain, and further north at Kollidoo ; also on the Karin hills east of Tounghoo at an elevation of 3000 feet. Extends down the Malay Peninsula. Nothing is known of its nidification.

### Sub Family.—TURTURINÆ.—*Bp.*

Habits terrestrial and arboreal; tail somewhat long, with pale tips to the outer feathers; neck usually adorned with a ring or spot.

### Sub Family, TURTURINÆ.—*Bonap.*

Bill lengthened, slender, the base soft and tumid; wings long; feet short; feathers of the rump rather rigid.

### Gen. Turtur.—*Selby.*

Bill slender; wings long, 2nd and 3rd quills longest; tail moderate, rounded or graduated; tarsi scutellated in front, naked; outer toe shorter than the inner.

**44. Turtur pulchratus,** *Hodgs., J. A. S. B.* xiii. Turtur rupicolus, *apud Jerd., B. Ind.* ii. p. 476, No. 792; *Hume and Dav., Str. F.* vi. p. 421.—The Ashy Turtle Dove.

Forehead pale isabelline; top of head bluish ashy, nape with a vinous tinge; upper back, cheeks, sides of the face and sides of the body, also the upper breast, vinous; chin and a small gular streak pale isabelline; neck patch black, each feather tipped with paler bluish white; *lower back and rump bluish ash;* also the upper tail coverts, which in some are edged with pale rufous; *central tail feathers dusky black, the others black and tipped broadly with greyish white, the outermost feather on each side white on the outer web and at tip*; scapulars, tertiaries, lesser and median coverts dark brown, margined with rufous; greater coverts dusky on the inner web and ashy on outer; primaries and secondaries dusky brown; darker on their outer web and very narrowly edged with dirty white; innermost secondaries edged and tipped with rufous; lower breast vinous, becoming albescent or ashy white on the middle of the belly, and *pure white on the vent and under tail coverts;* flanks and under wing coverts bluish ash. Bill brown, vinous on the basal half; irides orange; legs vinous red.

*Length.*—14 to 14·5 inches; tail 5·5; wing 8; tarsus 1·1; bill from gape 1·1.

*Hab.*—The Himalayas from Afghanistan to Sikkim at elevations of from 4,000 to 8,000 feet, also the Central Provinces, Central India, the N.-W. Provinces, and Nepaul. Breeds on the lower ranges of the Himalayas during May and June. At Mussooree and Murree it is said to lay in May two pure white eggs, which Hume adds are glossy and regular ovals, varying in length from 1·1 to 1·34, and in breadth from 0·85 to 1.

**45. Turtur meena** (*Sykes*), *Jerd., B. Ind.* ii. p. 476, No. 793; *Hume, Nests and Eggs* p. 501; *id., Str. F.* iii. p. 163; *Bl. B. Burm.* p. 146; *Hume and Dav., Str. F.* vi. p. 420; *Hume, Str. F.* viii. p. 110,

*Scully, Str. F.* viii. p. 340; *Oates, Str. F.* x. p. 235; *id., B. Br. Burm.* ii. p. 292; *Murray, Avif. Brit. Ind.* ii. p. 513, No. 1169. Columba meena, *Sykes, P. Z. S.* 1832, p. 140. Turtur rupicolus (*Pall.*), *Jerd., B. Ind.* ii. p. 476, No. 792.—The Rufous Turtle Dove.

Forehead, crown, nape, hind neck and back ashy brown, suffused with vinous, and the feathers indistinctly edged with rufous; a patch on the neck black with greyish tips; lower back and rump dark ashy, edged paler; upper tail coverts brown, edged with pale rufous; scapulars, tertiaries, lesser and median coverts brown, broadly edged with rufous; greater coverts and secondaries edged with ashy, the innermost ones edged with rufous; primaries dark brown edged with rufous; lower plumage vinous red, tinged with purplish in some, paler on the chin and throat; sides of the body, under wing coverts, vent and *under tail coverts ashy*; central tail feathers ashy brown, the others ashy brown, tipped with grey (*Oates*); bill brown, with a tinge of ashy on the basal half; iris orange-red; legs vinous red.

*Length*—13 inches; tail 5; wing 7; tarsus 1·1; bill from gape 1.

*Hab.*—The Himalayas to Nepaul and Ceylon. It is a permanent resident of the hilly portions of Southern India, and of the broken belt of hills that stretch across the continent of India from the northern portions of the Western Ghauts to Cuttack; thence it extends into Eastern Bengal, Khasia hills, Cachar, Assam and along the bases of the Himalayas as far west as the Sikkim and Nepaul Terais, and again southwards into Arrakan, Pegu and Northern Tenasserim. (*Hume.*) Breeds from December to April, but the majority lay in March, April and May. The number of eggs is two, and like all doves, pure glossy white.

46. **Turtur senegalensis** (*Linn.*), *Lev. O. A.* t. 270; *Tem. Pig.*, t. 45; *id., Descr. Egypt*, t. 9, 3; *Gray, Handlist Birds*, No. 9317; *Blf., East. Pers.* p. 270; *Hume, Str. F.* vii. 463; *Murray, Avif. Brit. Ind.* ii. p. 514, No. 1170. Turtur cambayensis (*Gm.*), *Jerd., B. Ind.* iii. p. 478, No. 794; *Murray, Hdbk. Zool., &c., Sind.* p. 193; *id., Vert. Zool., Sind*, p. 203.—The Little Brown Dove.

Head, nape, lores and sides of the face pinkish vinaceous, as are also the sides of the neck, throat and breast, gradually shading to paler on the upper abdomen, and white or fulvous white on the lower abdomen, vent and under tail coverts; chin white, sides with a patch of black and dark rufous feathers; back and scapulars brown, the latter with a slight rufous tinge; primaries and their coverts dusky brown, first three quills edged with fulvous white; secondaries darker brown than the primaries, slightly edged and tipped with pale grey; wing coverts pale grey, the edges of the feathers lighter; rump, upper tail coverts and central tail feathers like the back, the others black at the base and white for nearly their terminal half; edge of the wing and

under wing coverts dark ashy. Bill black; irides dark brown with a white inner circle; legs lake red.

*Length.*—10·5; wing 5; tail 4·5.

*Hab.*—Nearly throughout India, Sind, Kutch, Rajputana, Deccan, Concan, Punjab, N.-W. Provinces, Southern India generally, Beloochistan, Persia and Afghanistan. In Central and Western India specially abundant. Breeds all over the plains of India during March and April. During the scarcity of mutton in the plains of Mach in Beloochistan in the last Kandahar campaign, this little Dove, *Turtur risorius* (No. 1173) and *Columba livia et intermedia* formed the only flesh food (with now and again a Porcupine) of the Commissariat and Transport European staffs.

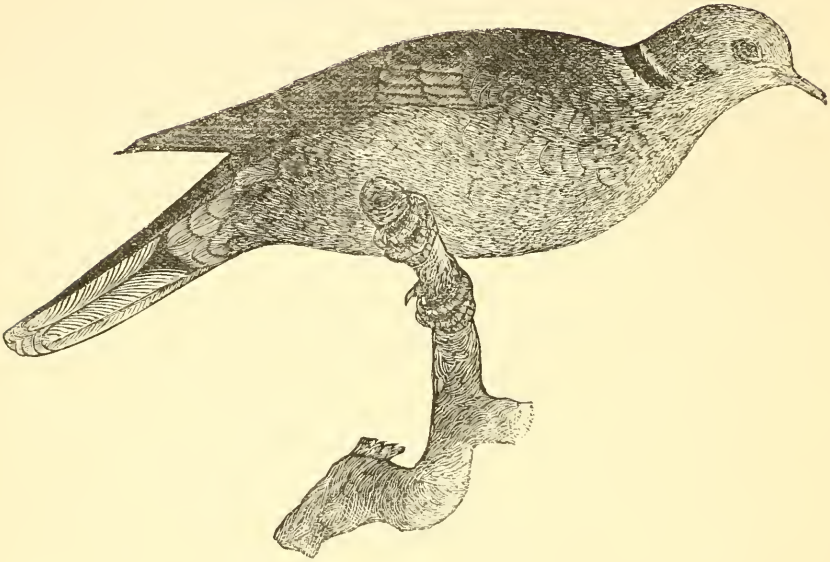
**47. Turtur suratensis,** *Gm.*, *Tem. Pig.* t. 43; *Jerd.*, *B. Ind.* ii. p. 479, No. 795; *Str. F.* v. pp. 231, 409; *Gray*, *Handlist* No. 9315; *Murray*, *Hdbk.*, *Zool.*, *&c.*, *Sind*, p. 194; *id.*, *Vert. Zool. Sind*, p. 203; *Murray*, *Avif. Brit. Ind.* ii. p. 514, No. 1171.—The SPOTTED DOVE.

Forehead greyish white; crown, nape, breast and upper abdomen pale vinaceous, darker on the breast, paling on the lower abdomen and flanks, and albescent on the under tail coverts; chin and throat white; patch on the neck black with narrow rufous tips; back and scapulars isabelline brown, or rufous brown, the feathers with dark shaft-stripes, broadening into a nearly triangular spot at the tip, on each side of which, especially on the scapulars and wing coverts, is a pale rufous or vinaceous spot; in some specimens scarcely a spot, but with this colour edging the feathers; edge of the wing, and the lower series of wing coverts near it greyish white, with faint dark shaft-stripes; primaries and secondaries dusky brown, the first three quills, and some of the secondaries edged with pale or greyish white; primary coverts dark brown; tail with the central feathers brown, the outermost black at the base, and tipped white for the terminal half, and the others with the white tips decreasing in extent; bill blackish; irides hazel, surrounded by a reddish sclerotic membrane; legs reddish.

*Length.*—12 inches; wing 5·5 to 5·75; tail 5·5, graduated.

*Hab.*—Throughout India nearly, to Ceylon and the Himalayas. Replaces the last on the Malabar Coast and in Lower Bengal. Jerdon says it is rare in the bare Carnatic land, the Deccan, and N.-W. Provinces. Uncommon in Upper Sind, but less so in Lower Sind. Breeds in April and May. It occurs, but less abundantly, in Rajputana and N. Guzerat.

**48. Turtur tigrinus** (*Tem.*), *Hume, Nests and Eggs Ind. B.* p. 506; *id.*, *Str. F.* i. p. 461; iii. p. 164; *Blyth*, *B. Burm.* p. 145; *Armstrong*, *Str. F.* iv. p. 337; *Oates*, *Str. F* v. p. 164; *Anders.*, *Yunnan Exped.* p. 665; *Hume and Dav.*, *Str F.* vi. p. 422; *Hume*, *Str. F.* viii. p. 110; *Bingham*, *Str. F.* ix. p. 194; *Oates*, *Str. F.* x. p. 235; *id.*, *B. Br. Burm.* ii. p. 290;



TURTUR RISORIUS.

*Murray, Avif. Brit. Ind.* ii. p. 515, No. 1172. Columba tigrina, *Temm., Knip. Pig.* 1. p. 94, pl. xliii. Spilopelia tigrina, *Salvad., Ucc. Born.* p. 296.—The MALAYAN SPOTTED DOVE.

Forehead and cheeks grey; crown, nape, breast and upper abdomen vinaceous, paling on the chin, vent and under tail coverts; patch on the neck and hind neck black, each feather with two white spots at the tip; back, scapulars, wing coverts and rump brown, each feather blackish along the shaft and tipped on both webs with lighter brown; outermost wing coverts pure grey on the outer webs; quills dark brown, some of the tertiaries with blackish shaft streaks and tipped paler; tail brown, the outer feathers broadly tipped with white, the white decreasing in extent on each inner feather on each side till it disappears on the fifth or central pair of feathers, which are dark brown; bill bluish black; irides reddish.

*Length.*—12·4 inches; tail 6; wing 5·5; tarsus 1; bill from gape 0·9.

*Hab.*—The whole province of British Burmah, extending northwards through the Indo-Burmese Countries to Cachar and eastwards to Cochin-China. Ranges down the Malay Peniusula to Sumatra, Java, Borneo and Celebes. Breeds from August to March in low trees and bushes, laying two eggs.

**49. Turtur risorius** (*Linn*), *Jerd., B. Ind.* ii. p. 481; *Hume, Nests and Eggs Ind. B.* p. 506; *id., Str. F.* iii. p. 165; *Wald. in Blyth's B. Burm.* p. 146; *Dresser, B. Eur.* vii. p. 51; *Dav. et Oust. Ois. Chine*, p. 387; *Cripps, Str. F.* vii. p. 297; *Legge, B. Ceylon* p. 702; *Hume, Str. F.* viii. p. 110; *Oates, Str. F.* x. p. 235; *Oates, B. Br. Burmah* ii. p 293; *Blanf., East Pers.* p. 270; *Murray, Hdbk. Zool. &c., Sind*, p. 194; *id., Vert. Zool., Sind*, p. 204; *Murray, Avif. Brit. Ind.* ii. p 515, No. 1173. Columba risoria, *Linn., Syt. Nat.* i. p. 285.—The INDIAN RING DOVE.

Head pale greyish brown, with a vinous tinge; the forehead albescent; nape and neck pale vinaceous; collar black, a narrow line of white before and behind it; back, scapulars and innermost tertiaries grey brown, as also are the rump and upper tail coverts; primaries and their coverts dusky brown; the primaries margined narrowly with whitish, and their coverts tinged with greyish; edge of the wing, lower series of the median coverts and greater series also pale grey; under wing coverts greyish white; chin and throat albescent; breast and upper abdomen, also the sides of the neck and breast pale vinaceous; flanks, lower abdomen, vent, thighs and under tail coverts ashy grey, the latter with whitish tips; tail with the central feathers like the back; outermost feathers on each side narrowly margined with greyish white on their outer web, with a broad black band about the middle, greyish at base, and broadly terminated with white, which on the others increase in extent. Bill black; irides crimson; orbital skin whitish; legs pinkish.

*Length.*—12 to 13 inches; wing 6·5; tail 5; bill at front 0·81.

*Hab.*—India generally, and Ceylon, except the more moist regions, as the Malabar Coast; abundant in Sind, Punjab, N.-W. Provinces, Oudh, Bengal, Rajputana, Kutch, Guzerat, Concan, Deccan, Central and South India, also Beloochistan and Southern Afghanistan. Rare in Burmah. Breeds throughout the year.

**50. Turtur humilis** (*Temm.*), *Jerd.*, *B. Ind.* ii. p. 482; *Hume, Nests and Eggs Ind. B.* p. 507; *id.*, *Str. F.* ii. p. 269; iii. p 165; iv. p. 292; *Armstrong, Str. F.* iv. p. 338; *Wald., Trans. Zool. Soc.* ix. p. 219; *David et. Oust. Ois. Chine*, p. 388; *Hume and Dav.*, *Str. F.* vi. p. 423; *Hume, Str. F.* viii. p. 110; *Oates, Str. F.* x. p. 235; *id.*, *B. Br. Burm.* ii. p. 294; *Murray, Hdbk., Zool., &c., Sind*, p. 194; *id.*, *Vert. Zool., Sind*, p. 204; *Murray, Avif. Brit. Ind.* ii. p. 516, No. 1174. Turtur tranquebaricus, *Herm., Obs. Zool.* p. 200; *Bly.*, *B. Burm.* p. 145. Turtur humilior, *Proc. As. Soc. Beng.* 1874, p. 241; *id.*, *Str. F.* iii. p 279.—The Red Turtle Dove.

*Male.*—Head and nape ashy grey, also the lores and sides of the face, slightly paler on the forehead; collar black, set off by whitish before and behind it; back, scapulars and wing coverts brick red, slightly paler behind the black collar; chin whitish; throat, breast and entire lower surface pale vinous red, white on the vent and lower tail coverts; rump and upper tail coverts deep slaty; primaries, their coverts and secondaries dusky brown; the margin of the primaries, as also the margins and tips of the secondaries, whitish; primary coverts slightly tinged with vinous red on their outer webs; edge of the wing greyish, some of the dark bases of the median coverts showing through; tail with the middle feathers ashy brown, the others greyish black at the base, and broadly tipped with white; outermost feathers on each side white on the exterior web; bill black; irides dark brown; legs purplish red.

*Length.*—9 inches; wing 5·5 to 5·75; tail 3 to 3·25. The *female* is duller in colour on the back, being more of an earthy brown and much paler below.

*Hab.*—The drier regions in India, to Ceylon and the foot of the Himalayas. Common in the Punjab, N.-W. Provinces, Oudh, Bengal, Rajputana, Kutch, Guzerat, Concan and Deccan, but less so in Sind. Occurs also in Assam and Northern Burmah. In Sind it affects the northern districts chiefly seldom seen below Sukkur. It is not known from S. Afghanistan, where *T. senegalensis* replaces it.

## Family, GOURIDÆ.—Ground-Doves.

Wings moderate; tarsus longer than in the *Turturinæ*, as are also all the toes; wings shorter and less pointed. The Indian representatives of the family belong to the *Phapidinæ* and *Calœninæ*.

### Sub-Family, PHAPIDINÆ.

General characters as of the family; tarsus not feathered; tail of 12, 14 or 16 feathers.

Gen. **Chalcophaps**—*Gould.*

Bill slender; wings moderately long; 2nd and 3rd quills nearly equal and longest; tail rather short and rounded; tarsus not feathered; plumage rich glossy metallic green.

**51. Chalcophaps indica** (*Linn.*), *Jerd.*, *B. Ind.* ii. p. 484, No. 798; *Hume, Nests and Eggs Ind. B.* p. 509; *id.*, *Str. F.* ii. p. 269; iii. p. 165; *Salvad.*, *Ucc. Born.* p. 299; *Bourdillon*, *Str. F.* iv. p. 404; *Blyth*, *B. Burm.* p. 147; *Dav. et Oust. Ois. Chine*, p. 384; *Hume and Dav.*, *Str. F.* vi. p. 424; *Hume*, *Str. F.* viii. p. 110; *Legge*, *B. Ceylon* p. 714; *Oates*, *Str. F.* x. p. 235; *Kelham*, *Ibis*, 1881, p. 528; *Oates*, *B. Br. Burm.* ii. p. 297; *Murray*, *Avif. Brit. Ind.* ii. p. 517, No. 1175.—The Emerald Dove.

Forehead white, continued as a supercilium over the eye; crown, nape, a narrow band down the hind neck and another across the upper back ashy-grey; back and wings shining dark emerald green; quills dark brown, the secondaries metallic green on the external web; tertiaries bright metallic green; smaller coverts near the edge of the wing white; on the lower back a narrow band of ashy, followed by a broad black one, then a second ashy one, and lastly a broad band, which with the upper tail coverts is dark ashy brown, tipped darker; sides of the head and neck and the whole under surface of the body deep vinaceous, rather duller on the abdomen; under tail coverts ashy; three central pairs of tail feathers dark brown, tipped paler, the others banded with black and ashy; under wing coverts chestnut; bill red; irides dark brown; eyelids plumbeous; legs dusky red.

*Length.*—10·5 inches; tail 4; wing 5·8; tarsus 1; bill from gape 0·9.

*Hab.*—Throughout India in forest countries and well wooded districts; not in the drier regions, as Sind, Rajputana, Kattyawar, &c. It is abundant in Lower Bengal; extends to Assam and all the countries on the east of the Bay of Bengal as far as Tenasserim. It also occurs in Ceylon, the Andamans, Nicobars, the Indo-Burmese Countries, South China, Siam, the Malay Peninsula, and all the islands nearly down to Australia. Frequents thick forests, and is met with in small parties or in pairs. Breeds from March to July in suitable localities. The nests, according to Hume, are placed in some dense bush or low thick-foliaged tree. They are more regular saucers than those of other doves, composed of roots, grass, or twigs, but comparatively neat and with a central depression. Eggs two in number, pure white, from 1 to 1·1 inch in length and from 0·82 to 0·86 in breadth.

Gen. **Geopelia**.—*Swains.*

General characters of *Turtur*; tail of 12 feathers only.

**52. Geopelia striata** (*Linn.*), *Salvad.*, *Ucc. Born.* p. 298; *Hume and Dav.*, *Str. F.* vi. p. 423; *Hume*, *Str. F.* viii. p. 110; *Kelham*, *Ibis*, 1881,

p. 528; *Murray, Avif. Brit. Ind.* ii. p. 518, No. 1176. Columba striata, *Linn., Syst. Nat.* i. p. 282.—The Barred Ground Dove.

Forehead and crown, as far as the eyes, also the cheeks, chin, and throat pure grey; upper part of the ear coverts grey; lower part brown; remainder of the crown and nape vinous brown; sides of the neck, whole hind neck and upper back, sides of the breast and of the body white, closely and finely barred with black; centre of the breast and abdomen vinaceous; vent and under tail coverts white; lower back, rump, upper tail coverts, scapulars, wing coverts and tertiaries brown, each feather with a terminal black bar; primaries and secondaries dark brown, the latter broadly edged with the colour of the back; central tail feathers pale brown, the others dark brown, the four outer pairs broadly tipped with white; under wing coverts chestnut. (*Oates.*) Front of tarsus and toes pinkish purple, with the scutation divided by pink lines; back of tarsus and soles fleshy pink; bill blue at base, bluish white terminally; irides white or grey, brown. (*Davison.*)

*Hab.*—Tenasserim, in the extreme south, extending down the Malay Peninsula; is also found in Sumatra and Java. According to Davison its habits are like those of *Turtur tigrinus.*

## **Sub-Family,** CALŒNINÆ.

Bill strong with a tubercle at base; legs and feet stout; head with long crest; plumage metallic.

**53. Calœnas nicobarica** (*Linn.*), *Hume, Str. F.* ii. p. 271; *id., Nests and Eggs* p. 510; *Blyth, B. Burm.* p. 147; *Hume and Dav., Str. F.* vi. p. 425; *Hume, Str. F.* viii. pp. 68, 110; *Oates, B. Br. Burm.* ii. p. 299; *Murray, Avif. Brit. Ind.* ii. p. 518, No. 1177. Columba nicobarica, *Linn., Syst. Nat.* i. p. 283.—The Hackled Ground-Pigeon.

Entire head and neck from deep slaty grey to blackish brown; a long and thick bunch of narrow hackles from the base of the occiput hairlike and slaty grey and from the back of the neck metallic green, shot with gold and copper and margined with slaty grey; rest of upper plumage except the tail and longer and upper tail coverts which are white—refulgent with metallic reflections; lesser wing coverts, outer webs of primaries, winglet, greater coverts, and earlier secondaries glossed with deep blue; other portion of secondaries and their coverts, most of the median coverts, rump and shorter upper tail coverts brilliant green; scapulars adjoining the wing coverts the same, but with a coppery glow; upper breast like the head; lower breast, abdomen, sides, flanks, vent and shorter under tail coverts variegated deep metallic green and dark slaty, the latter forming a fringe to the feathers; first two primaries unglossed; inner webs of the primaries and secondaries and their under surface blackish brown; wing lining and axillaries brighter or duller metallic

green or deep blackish slaty with a tinge of gloss; lower breast deep metallic green, the feathers tipped purplish; tibial plumes rich purplish blue. The young want the metallic gloss and protuberance at base of bill, and is duller everywhere; bill dark blackish grey; irides deep brown; legs dull purplish lilac.

*Length.*—16 inches; tail 3·5; wing 10; tarsus 1·7; bill from gape 1·5.

*Hab.*—This, the most lovely species of the Pigeon group, inhabits the Mergui Archipelago and the Nicobars, and extends to the Malay Peninsula. Feeds on fruit; nests on trees only as far as has yet been ascertained on the Island of Battye Malve in the Nicobars. The nests are like those of other pigeons. Egg, one only, spotless white; 1·84 × 1·27. Mr. Walsingham in *epist* says its flesh is excellent food, and in his opinion superior to that of the Rock Pigeon, and less tough.

## Order, Rasores,—Gallinaceous or Game Birds.

Bill usually short, vaulted, more or less arched and bent down at the tip; nostrils situated in a membrane at the base of the bill; wings usually short; tail variable in length and form; tarsi long and strong, often spurred; hinder toe short and elevated from the ground.

## Family, PTEROCLIDÆ,—Sand or Rock-Grouse.

Bill short, curved to the tip and compressed at the sides; wings and tail long and pointed; tarsi feathered; hind toe small.

### Gen. Pterocles.—*Tem.*

Bill small, rather stout; culmen curved, sides compressed; nostrils at base partly covered by membrane; wings long, 1st and 2nd primaries longest; tail with the median rectrices sometimes lengthened beyond the rest; tarsi short, feathered in front and on the inner side.

Mr. D. G. Elliott has a very clear and exhaustive paper on the *Pteroclidæ* Family in the Proceedings of the Zoological Society of London, 1878, pp. 233, 264, giving the literature of the Family, its classification and a review of the geographical distribution, as well as a key and descriptions, with the synonomy of each species. The following key is extracted from the paper referred to, and will be found most useful.

A. "Without pectoral band.

(*a*) Stripe on each side of forehead from nostril to above the eye; chin and centre of throat black...*P. coronatus.*

(*b*) Lores and band encircling back of head pearly grey; cheeks, ear-coverts and throat orange yellow; centre of abdomen black ..................................*P. senegallus.*

B. With pectoral band.

(*a*) Without black bar on forehead.

(*a′*) Median rectrices not lengthened beyond rest; upper part of throat and sides of neck rufous; lower portion of throat black; band on lower part of breast, abdomen and flanks black..................................................*P. arenarius.*

(*b′*) Median rectrices greatly lengthened beyond the rest.

(*a″*) Throat yellow; black band across breast; abdomen and flanks chestnut ..........................................*P. exustus.*

(*b″*) Throat and stripe behind the eye black; sides of throat rufous; centre of breast chestnut, bordered above and below with black; rest of under parts white ...............*P. alchata.*

(*b*) With black bar on forehead.

(*a′*) Breast uniform greenish buff.

(*a″*) Throat pale buff; upper part of breast buff, crossed with numerous narrow black bars; middle of breast uniform buff, crossed in the centre by a narrow black bar and another of the same hue on its lower edge; rest of under parts yellowish white, barred narrowly with black ............*P. lichtensteini.*

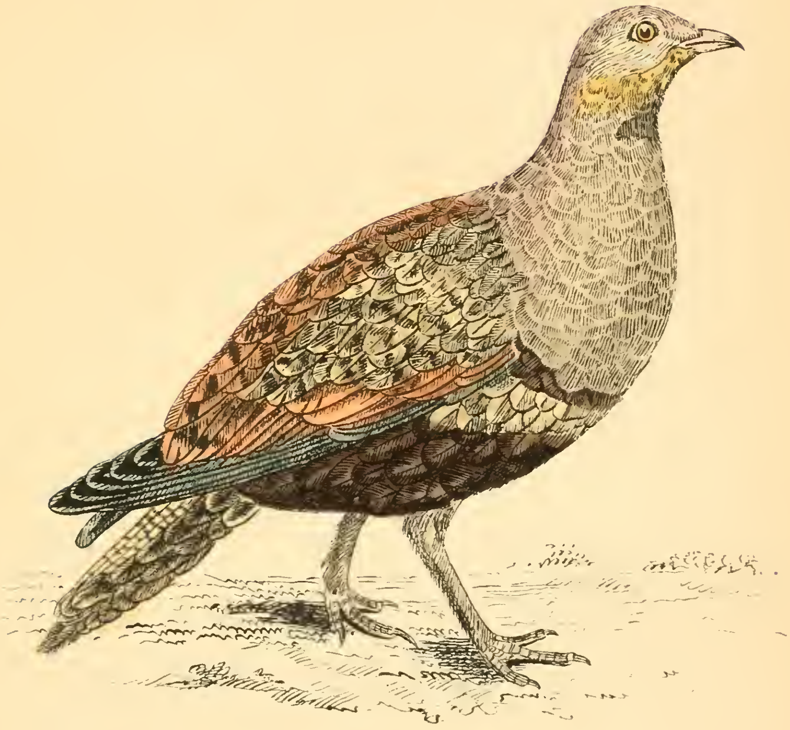
(*b″*) Throat and breast buff; triple band separates the fulvous breast from the abdomen, the first maroon, the second creamy white, and the 3rd unspotted chocolate brown..................................................*P. fasciatus.*

**54. Pterocles coronatus**, *Licht. Verz. d' Doubl.* p. 65; *Tem. Pl. Col.* No. 339, 340; *Heugl. Syst. Ueber. N. O. Afr.* p. 304; *Ibis*, 1864, pp. 27, 240; *id.*, 1870, pp. 9, 16; 1871, p. 144; *Str. F.* i. p. 224; *id.* (1876); iv. p. 230; *Blf., East. Pers.* ii. p. 272; *Murray, Hdbk., Zool., &c., Sind*, p. 200; *Elliott, P. Z. S.* 1878, No. 282. *Murray, Avif. Brit. Ind.* ii. p. 520, No. 1178.—THE CORONATED SAND GROUSE.

PLATE, fig.

*Male.*—A line on each side of the forehead from the nostrils to above the eye black, and a pale fulvous one between these from the point of the forehead. Crown of the head pale chestnut, vinous or rufescent fawn. A pearly grey band from the anterior angle of the eye, continued as a supercilium and extending round to the nape;* lores and a narrow band edging the black chin and throat stripe white; sides of the face, ear coverts and the neck all round orange buff; base of the neck and upper back isabelline, the feathers edged dusky grey; interscapulars the same, with median buffy spots at the

* In two specimens I possess there is a distinct pearly grey band across the forehead immediately behind the termination of the black forehead stripes.



PTEROCLES ARENARIUS (MALE)

tips; rump and upper tail-coverts a dark or dirty grey, mixed with the fulvous of the base of the feathers; tail with the median rectrices of a pale vinous colour, dark shafted, with a subterminal dark spot, and very narrowly tipped with white; lateral feathers deeper vinous with also a subterminal dark bar, and broadly tipped with white; all the feathers with a few dusky sprinkles behind the dark band; primaries and their coverts dull grey or dusky brown; all the primaries, except the first three, broadly margined with fulvous white obliquely towards the tips on their inner webs, and also slightly tipped the same; secondaries hair brown; tertiaries vinous on their inner webs and edged on the outer with buffish; scapulars vinous at the base, dark shafted, with a subterminal dark band, and mesially tipped with a nearly oval buff spot; median wing coverts the same; the greater series greyish buff or buffy isabelline; abdomen, flanks, under wing coverts, vent and lower tail coverts white, slightly soiled on the middle of the abdomen, and in some specimens a pale isabelline; tarsal plumes white.

The *female* has the throat and sides of the neck orange buff; the chin paler and nearly albescent; the crown very pale cinnamon; entire upper surface buff, with, in some specimens, a vinous tinge and barred with numerous crescentic and broken bands of dark brown; breast and under parts paler buff, also with crescentic bands; the flanks albescent; scapulars largely blotched with dusky, and with buff tips; primaries and secondaries as in the male, but very pale or hair brown.

*Length.*—11·75 to 12 inches; wing 7 to 7·75; tail 3·75; bill at front 0·45.

*Hab.*—Sind, Persia, Beloochistan, Afghanistan, N.-W. Arabia, Egypt and Nubia. Breeds in the southern portions of the Sahara, where it is said to replace *P. arenarius*.

55. **Pterocles senegallus**, *Lin. Mantissa.* 1771, p. 526; *Lath., Ind. Orn.* vol. ii. p. 642; *Gray, Gen. B.* vol. iii. p. 519; *Tristram, Ibis,* 1860; *Str. F.* i. p 221; iii. pp. 418. 4; v. 231; *Murray, Hdbk., Zool., &c., Sind,* p. 197. Pterocles guttatus, *Licht. Verz. Doubl.* Pterocles senegalensis, *Shaw, Nat. Misc.* vol. iv. pl. 933: *Shelley, Ibis,* 1871, p. 144.—The Spotted Sand Grouse.

PLATE, fig. 1.

"The male has the whole chin and throat with a patch extending upwards from the throat, towards, but not quite meeting on the back of the neck, bright buffy yellow or orange buff; lores, forehead, a broad stripe over the eye continued round the nape and the back of the neck, pale blue grey, dull and tinged fawny in some specimens; crown, occiput, and nape, a sort of dove colour or pale, slightly rufous fawn; back and rump a somewhat similar, but more sandy colour, in many specimens more tinged with fawn;

the upper tail coverts buffy yellow, all but the longest obscurely tipped with a somewhat pinkish mouse colour. They are more or less pale dove colour at their bases, which colour however is not seen till the feathers are lifted. The central tail feathers have the pointed tips black, in many specimens more or less tinged hoary buffy, and the rest of the visible portion yellowish buff, but the bases, as may be seen on lifting the feathers, are greyish ; the lateral tail feathers are a greyish brown at base, dark-shafted, with conspicuous white tips, and broad blackish brown subterminal bands ; the primaries are pale isabelline, the shafts conspicuous and black ; they have broad ill-defined subterminal brown bands, beyond which there is a narrow paler tipping, and they are pretty conspicuously margined on their inner webs towards the tips with still paler isabelline. The first primary has the outer web browner, the others have the outer webs, especially toward the bases, a brighter isabelline. The whole visible portions of the lesser coverts and of the primary greater coverts are yellowish fawn, or isabelline, varying much in shade in different specimens ; these greater coverts are dark shafted, and with a brownish tinge next the shafts on the inner webs ; the scapulars bluish grey at the bases, tipped broadly, but chiefly on the outer webs, with buffy yellow, and the lesser ones tinged immediately above the yellow with a somewhat brownish purple, or dull greyish vinaceous. The secondary, median, and greater coverts like the lesser scapulars, but showing more of the vinaceous hue. The secondaries are brown, lighter towards their bases. The lower part of the neck in front and upper breast are nearly the same blue grey or greyish fawn as the back of the neck ; the lower breast, abdomen, sides, flanks, axillaries, and wing lining isabelline or desert colour ; the upper abdomen often with a faint orange buffy tinge. A broad irregular deep brown patch runs down the centre of the abdomen to the vent ; the lower tail-coverts are greyish brown at their bases, but are broadly tipped with white (often tinged buffy or isabelline) which is the only colour visible until the feathers are lifted. The lower surfaces of the quill shafts are white.

"The female has the yellow chin and throat patch like the male, but paler; the lores and feathers immediately encircling the eye pale isabelline white ; the whole upper parts and the neck all round pure isabelline, tinged slightly rufous on the occiput, nape, and back, and conspicuously spotted with dull, somewhat greyish, black ; the spots on the forehead and front part of the head are small and irregular ; on the nape and occiput they are more or less arranged in rows (so as to produce more of a striated appearance) and in a band running from behind the eye round the nape, they are very much more densely set ; on the upper tail coverts they are larger ; while on the scapulars they take the form of double spots or irregular bars. The primaries and their greater coverts are much as in the male, but paler ; the central tail feathers are isabelline, dark shafted, the point greyish black, and the rest of the feather with narrow, transverse, irregular bars of the same colour on both

PTEROCLES ARENARIUS (FEMALE)

webs; the lateral tail feathers are much as in the male, but have the basal portions more tinged with isabelline, and more or less imperfectly barred. The breast, abdomen, and wing lining are as in the male, but somewhat purer and paler; the abdominal patch is narrower and perhaps also somewhat paler.

"Irides brown, bare; orbital skin yellowish; bill pale plumbeous, bluish grey, or bluish white, always somewhat more dusky towards the tip; feet pale plumbeous or bluish white, paler towards the tips of the toes; weight 8 to 12 ounces, but averaging about 10 ounces.

"*Male, length.*—13·4 to 14·7 inches; expanse 23 to 23·7; tail from vent 5·3 to 6; wing 7·5 to 7·9, the wings when closed reach to within from 2·3 to 2·8 of the end of the longest tail feathers, viz., the central ones, which exceed the others by from 1·75 to 2; bill at front 0·44 to 0·47; tarsus 1 to 1·05.

"*Female, length.*—12·4 to 13·1 inches; expanse 22 to 22·6; tail from vent 4 to 4·6; the central tail feathers only extending from 0·75 to 1·2 beyond the rest; wing 7·3 to 7·5; bill at front 0·4 to 0·44."—*Hume, Str. F.* i. p. 219.

Common throughout Rajputana, Kutch, Kattiawar, Guzerat and the Punjab. Breeds in Sind. Like the preceding species it is found in N. Africa, also in N.-W. Arabia, and in Beloochistan.

**56. Pterocles arenarius,** *Pall., Nov. Comm. Petrop.* vol. xix. p. 418; *id., Rosso. As.* ii. p. 73; *Lath., Ind. Orn* ii. p. 642. Pterocles arenarius, *Tem. Pig. et. Gallin.* vol. iii. p. 240; *id., Pl. Col.* Nos. 52, 53; *Gray, Gen. B.* iii. p. 518; *P. Z. S.* 1858, p. 501; *Ibis,* 1859, p. 352; 1860, p 69; *Jerd., B. Ind.* iii. p. 496; *Str. F.* i. p. 219; iii. 418; iv. 179; *Blf., East. Pers.* ii. 271; *Murray, Hdbk., Zool., &c., Sind,* p. 194.—The LARGE SAND GROUSE.

PLATE.

"Forehead and crown greyish brown, with a faint pearly tinge, in some specimens with a buffy tinge; lores behind the eye and ear coverts light grey, in some specimens, especially old males, the dark shafts of the feathers of the lores, under the eye, and of the ear coverts are distinctly visible and end in bristles; nape and base of the neck, like the crown; back, scapulars, upper tail and wing coverts rich buff or orange buff with a subterminal dark bar, the bases of the feathers paler buff, with waved barrings and vermiculations; primaries greyish and black shafted, the outer web of the outermost quill dark brown, and with the two following tipped blackish, the rest the same, but edged on the tip and the outer edge of the inner web near the tip, with whitish, the under surface black; the secondaries basally white or fulvous white, with faint vermiculations on the exterior webs, all broadly tipped dusky

and the margin of the exterior web blackish; tertiaries dusky grey, or buffish, with vermiculations basally, and margined at the tips on the exterior web with rich buff or orange buff; the visible portion of the lower series of the median and greater coverts rich buff or orange, forming in the closed wing, with the outer edges of the tertiaries, an oblique bar of rich buff; edge of the wing fulvous white; under wing coverts pure white; chin, upper throat, sides of the neck to behind the ear coverts and nape deep chestnut; middle of the throat with a large triangular patch of black; breast dull ashy or pearly grey, crossed on the lower part by a broad black band, succeeded by a broad buffy one, about four times the width of the black band; abdomen, vent and thigh coverts deep black; under tail coverts black, tipped with white; tail with the central tail feathers like the back, or orange buff, with numerous dark bands, and slightly elongated beyond the others; lateral feathers dusky rufescent, with darker narrow bars, tipped white, and with a subterminal black band; tarsal feathers fulvous white; bill bluish; feet dull yellowish brown; irides dark brown.

"*Length.*—11·75 to 12·5; wings 9·25; tail 4 to 4·25; tarsus 1·1.

"The female differs in having the whole head and upper parts, and also the breast narrowly barred with brown. The pectoral band is narrower and the chin fulvous with a narrow black edge."

*Hab.*—The desert regions of Asia, Southern Europe and North Africa; Asia Minor and Palestine. Everywhere common in Sind, Punjab, N.-W. Provinces, Oudh and Bengal; Kutch, throughout Rajputana, Kattiawar and North Guzerat; Beloochistan, Persia, Afghanistan and Eastern Turkistan.

**57. Pterocles exustus,** *Tem. Pl. Col.* Nos. 354, 360; *Rupp. Les. Trait. Orn.* p. 517; *Sykes, P. Z. S.* 1832, p. 154; *Gray, Gen. B.* iii. p 519; *Jerd., Madras Jour.* xii. p. 3; *Handlist, Syst. Orn. W. Afr.* p. 205; *Jerd., B. Ind.* iii. p. 502; *Hume, Str. F.* vii. p. 160; *Elliott, P. Z. S.* 1878, p. 248; *Murray, Hdbk., Zool., &c., Sind,* p. 202.—The COMMON SAND GROUSE.

PLATE, fig. 5.

Head, nape, sides of the neck and breast isabelline with a faint fulvous tinge; lores, sides of the face, chin and throat yellowish or light orange buff; back and rump like the breast, the feathers with darker tips; scapulars tipped greyish fulvous; upper tail coverts with a greenish cast; primaries dusky brown, all, except the four outermost broadly white on their inner margins near the tip, the innermost also tipped white; secondaries hair brown, their terminal third with buffy edges on their exterior webs; tertiaries the same, but with narrower buff edgings; wing coverts buff, the feathers tipped narrowly with blackish chestnut; tail with the central feathers much elongated beyond the rest, slightly darker buff than the wing coverts, black-shafted and the lengthened narrow portion black; lateral feathers dusky rufescent, with pale rufous

bars on their exterior webs, tipped white and with a subterminal dark band; a narrow black pectoral band, occasionally edged on its upper side with fulvous white followed by a broad band of isabelline; rest of the under parts chocolate brown, paler on the vent; flanks and thigh coverts chestnut; lower tail coverts creamy or fulvous white; tarsal plumes fulvous or yellowish white.

The female has the entire upper plumage, as also the space between the pectoral band and abdomen, fulvous, closely barred with deep brown; breast unspotted isabelline, like the male.

*Length.*—10 to 11·5 inches; wings 7; tail 3·5. The males average from 9·5 to 10 inches in length; bill leaden brown; legs brown; irides dark brown.

*Hab.*—N.-E. Africa, Arabia, Nubia, Egypt, Abyssinia and Palestine; Sind, Kutch, Rajputana, Kattiawar, N. Guzerat and Deccan; Punjab, N.-W. Provinces, Bengal, Sylhet, Burmah, Beloochistan, Quetta and Afghanistan. Breeds almost everywhere from February to August according to locality, laying 2—3 eggs of a fine smooth texture and gloss, rather long and cylindrical, of a pinkish stony colour, thickly spotted and streaked or irregularly blotched with dark and light shades of olive brown and inky purple, varying in length from 1·32 to 1·6 inches and in breadth from 0·95 to 1·11.

**58. Pterocles alchata**, *Linn.*, *Syst. Nat.* i. p. 276; *Gmel.*, *Syst. Nat.* i. 754; *Lath.*, *Ind. Orn.* ii. p. 641; *Licht.*, *Verz. Doubl.* p. 64; *Jerd.*, *B. Ind.* iii. p. 500, No. 801; *Hume*, *Str. F.* i. p. 221; *Blf.*, *East. Persia* ii. p. 271; *Murray*, *Hdbk.*, *Zool.*, *&c.*, *Sind.* p. 197; *Elliot*, *P. Z. S.* 1878, p. 251. Pterocles setarius, *Tem.*, *Pig. et Gallinæ* iii. pp 256, 714.—The Pin-tailed Sand Grouse.

PLATE, fig. 6.

*Male.*—Forehead and crown, also the nape and sides of the face yellowish buff with a ferruginous tinge; the crown with some nearly obsolete dark bars; chin, throat and a streak behind each eye black; neck in front and upper breast greenish buff, the feathers above pale chestnut, those of the breast with a dark brown transverse band forming a bar across; lower breast pale chestnut, the feathers ashy white at base, with a subterminal dark or dusky bar, and broadly terminated with chestnut; a black band separates the chestnut breast from the white of the abdomen; hind neck olive brown; upper back the same, each feather tipped with yellow; lower back, rump and upper tail coverts pale buff, with, in some, a rufescent tinge, barred transversely with black; scapulars rufescent or orange buff, the feathers barred with black and tipped with yellow; on some feathers this yellow tip is subterminal, with a very narrow black margin at the extreme tip; shoulder of wing olive brown; lesser, median and greater coverts broadly maroon, bounded above and below with a narrow white line, and tipped narrowly with black, the bases of the feathers being brownish ash; upper series of the median

and greater coverts olive brown at base, then broadly greenish yellow and margined with black at the tips; primary coverts brownish ash, black-shafted; primaries black-shafted, all (except the outer web of the first which is black) with their outer webs ashy grey, their inner webs rufescent grey near the shaft (not extending to the tip), then broadly dusky brown, and narrowly margined to the tip with white; secondaries with the outer webs and tips of the inner webs dusky brown, rest of the inner web and edging to the outer web white; tertiaries greenish olive on their outer web and rufescent grey on their inner, the uppermost with a yellow spot terminally; abdomen, flanks and axillaries white, the shafts of the feathers, except those of the axillaries, black basally; a large white patch on the under surface of the wing, formed by the white bases of the inner webs of the secondaries and their coverts; the edge of the wing inside dusky brown; tarsal plumes whitish; tail with the lateral feathers white on their outer webs, their inner webs grey brown, margined with narrow, nearly obsolete dusky and buff bars, the tips of the feathers broadly white; rest of the tail feathers barred buff and dark brown, plain grey brown near the shaft, and all (except the longest rectrices, which are black) tipped with white; bill horny; orbits dark plumbeous; irides dark brown.

*Length.*—To end of longest rectrices 13 inches; wing 8; tail 6 to end of longest rectrices.

*Female.*—Top of head and back deep buff, barred with black; sides of face and neck orange yellow; throat and chin white; a dark band on the lower neck, another on the upper breast, and a third on the lower breast separating the white of the abdomen. Upper plumage barred black and buff; secondaries the same, with a subterminal grey bar.

*Length.*—13 inches; wing 7·75; tail 5·37; irides and orbits as in the male.

*Hab.*—Sind, Punjab, N.-W. Provinces and Rajputana; Beloochistan (in the Bolan, Quetta and at Khelat), Persia, at Bushire, Southern and Eastern Afghanistan and Eastern Turkestan. It also inhabits N. Africa, Palestine, Spain and Portugal, and is said to breed in parts of Western Asia. In Sind, especially in the Northern districts, the Pintail is found in flocks, and sometimes in countless numbers; in the southern parts it is also found, but evidently only as stragglers.

**57. Pterocles Lichtensteinii,** *Tem. Planch. Col.* 355-361; *Heuglin, Syst. Ueber. Vog. N. Afr.* p 304; *Speke, Ibis*, p. 247; *Hume, Str. F.* i. p. 219; *Murray, Hdbk., Zool., &c., Sind*, p. 195. *Butbur*, Sind.—The Close-barred Sand Grouse.

PLATE, fig. 4.

*Male.*—Frontal zone white, or buffy white; a broad black semicircular band behind it extending from the anterior angle of the eye on each side; behind this another white or buffy white band, interrupted on the crown, the feathers

1. *Pterocles senegallus.* 2 *Pterocles coronatus.* 3. *Pterocles fasciatus.*
4 *Pterocles Lichtensteini.* 5. *Plerocles exustus.* 6. *Pterocles alchata.*

of which are buffy white and mesially dark brown; a buff spot above the hinder angle of each eye; chin and throat pale buff, their sides the same, with minute black spots; upper breast, hind neck and back pale or fulvous white, with regular and close barrings of black; scapulars, wing coverts and tertiaries the same, the black transverse bars rather broader and deeper in colour, the tips of the feathers broadly yellowish buff; upper tail coverts fulvous white, the black bars more distant and as wide as the fulvous interspaces; primaries and their coverts hair brown, the outer web of the first margined with dull white, more conspicuous basally, and some of the inner ones with white margins to the tips; secondaries dark brown; lower breast yellowish buff with a narrow black band crossing it in the middle and another on the lower part of the breast, formed by the dark termination of the lowest breast feathers; below this the abdomen, flanks, vent and under tail coverts are white, with transverse brown bars; tarsal plumes buffy white; tail barred buff and black, the terminal black bar broadest, with a streak running up the shaft of the feathers and partially dividing the broad buffy tips.

The *female* wants the frontal patch and the semicircular band behind it, also the buff breast and band crossing it in the middle; the chin and throat are pale buffy, minutely spotted with dark brown; the upper surface of the body finely, closely and narrowly barred with pale fulvous and dark brown; the lower surface the same, but the fulvous interspaces are broader and the dark bars narrower; bill horny; feet yellow; irides brown; orbits lemon yellow.

*Length*.—10 inches; wing 7·25; tail 3·25; bill 0·62.

*Hab.*—Sind, Punjab, Arabia, N.-E. Africa.

**60. Pterocles fasciatus** (*Scop.*), *Gould, B. Asia*, pt. ii. pl. 14; *Jerd., Ill. Ind. Orn.* pl. 10 and 36; *id., B. Ind.* ii. p. 498, No. 800; *Hume, Nests and Eggs Ind. B.* p. 511; *id., Str. F.* i. p. 391; vii. p. 160.—The Painted Sand Grouse.

PLATE fig. 3.

A narrow white band on the forehead followed by a broad black one and succeeded by a narrow white one, and another black one which widens behind the eye and ends in a white spot; occiput and nape streaked with black and fulvous; sides of the head, neck, breast and shoulder of wing fulvous yellow or buff; back, scapulars, tertiaries and tail fulvous yellow banded with deep brown; quills, brownish black with narrow pale edging; median and greater coverts and some of the secondaries broadly banded with black and edged with white, ; a triple band—a maroon, a creamy white and a chocolate brown one—separates the fulvous breast from the abdomen, which with the vent and under tail coverts are also chocolate brown, the feathers tipped with white. The *female* has not the bars on the occiput and nape, nor the pectoral bands and the wing bars; the sides of the neck, breast, wings, and tail are mixed fulvous

and rufous and finely barred with black; lower breast and abdominal region finely barred with blackish and creamy or fulvous white; bill red; irides dark brown; feet dull yellow.

*Length.*—10 inches; wing 7; tail 3·25; tarsus 1·1.

*Hab.*—The greater part of India, except in the very moist countries. It is recorded from the Deccan, Carnatic and Central India, also from Sind, Punjab, and the N.-W. Provinces, and from Delhi to Mount Aboo in Guzerat, Jodhpore, and Sambhur. Affects the low ranges of rocky and more or less barren hills. They breed almost everywhere they occur, making a depression in the soil and laying 2—3 eggs, a delicate pinkish fawn or pale salmon colour, here and there finely speckled, spotted and streaked with brownish red and numerous spots of pale pinky purple underlying as if it were the primary marking. In shape and markings the eggs vary a good deal. In length they vary from 1·3 to 1·62, and in breadth from 0·93 to 1·05.

## Gen. **Syrrhaptes**—*Lin.*

Feet smaller than in *Pterocles*, and feathered to the claws; hind toe wanting; 1st and 2nd primaries lengthened and attenuated.

**61. Syrrhaptes thibetanus**, *Gould, Cent. Him. B.* pl.; *id., Birds Asia*, p. ii. pl. 69; *Jerd., B. Ind.* iii. p. 504 (*note and descr.*); *Hume and Marsh., Game Birds Ind.* i. p. 43, pl.—The Thibetan Sand Grouse.

*Male.*—Forehead and lores whitish, faintly tinged with buffy, the feathers dark shafted; crown, occiput and nape white, closely and narrowly barred transversely with dark brown; chin, throat, cheeks, ear coverts, sides and front of neck buffish yellow during the breeding season; and buffish white during winter; back of the neck, upper back and lower breast whitish, tinged with vinaceous, and transversely barred narrowly with brown; scapulars and tertials vinaceous fawn, the inner webs of the scapulars with large black blotches, and everywhere excessively finely vermiculated with blackish brown; lower back and rump white, vermiculated with greyish brown; upper tail coverts fawn colour, also vermiculated with greyish brown; central tail feathers fawn colour, the attenuated portion slaty black; lateral tail feathers rufous buff, tipped with white and barred widely with black; primaries and their coverts slaty black, with a white patch near the tip on the inner web; secondaries black; lower breast grey; rest of under surface white, the feathers of the leg tinged with fulvous.

*Length.*—18 to 20 inches; wing 9·9 to 10·5; tail 7·5 to 9·5; bill at front 0·74 to 0·78.

*Hab.*—The semi-desert plains of Ladak and the upper portions of the Sutlej Valley. Hume adds that he saw numbers on the Roopshoo plains about the head of the Pangong Lake. It has also been got by Wilson on the water shed range crossing from the Mussoorie hills into Thibet.

## Family.—PHASIANIDÆ.

Bill moderate, strong, vaulted, the tip of the upper mandible hooked over the lower; nostrils apert. Wings moderate or short; tail of from 12 to 18 feathers, long and broad; tarsus moderate or long, spurred in the males; toes long; hind toe raised. This family includes the Peafowls, also the Jungle and Spur fowls and Pheasants. Wherever the different species are found, they are sought for eagerly by all sportsmen, especially the *Phasianinæ*, first, owing to the brilliancy of their plumage, and next because they may be said to be the mainstay of one's larder in the hills. As flesh food, even the *Pavoninæ* are excellent eating, and may be compared to an English pheasant. Whether Monaul, the Kalijes, Silver Pheasants, Koklass, or Fireback, all can be kept hung up in the larder, for often more than a week, during the time of the year they are permitted to be bagged as game.

### Sub-Family—PAVONINÆ—Peafowl.

Plumage brilliant green, shot with gold, and ocellated.

62. **Pavo cristatus**, *Linn.*, *Syst. Nat.* i. p. 267; *Elliot*, *Mon. Phas.* i. pl. v.; *Jerd.*, *B. Ind.* iii. p. 506; *Hume and Marsh.*, *Game Birds* p. 83; *Murray*, *Vert. Zool.*, *Sind*, p. 212; *id.*, *Avif. Brit. Ind.* ii. p. 529, No. 1186.—The Common Peacock.

Crest with bare shafts, except at the tip. Whole head, neck, and breast rich purplish blue with gold and green reflections; scapulars, tertiaries and lesser wing coverts rufescent, barred with black; facial skin greyish white; back green, the feathers scale-like in appearance with coppery edges; median coverts deep blue; primaries and tail chestnut; abdomen and under surface black; train green, ocellated. Bill horny brown; irides dark brown.

*Length.*—Without train, 42 to 48 inches; with train, more than double the length of head to true tail; wing 18.

The pea hen is chestnut brown on the head and nape; neck greenish, edged with whitish brown; upper surface of the body hair brown with undulations; quills brown; tail deep brown, tipped with white; chin and throat white; breast greenish, like the neck; abdomen white; under tail coverts brown.

*Length.*—38 to 40 inches; wing 16; tail 14. Crest feathers with bare shafts except at the tip.

*Hab.*—Throughout India proper, extending into Ceylon and Assam. This lovely bird is so well known that any account of its habits would be superfluous. They generally roost at night on high trees, seldom, if ever, on the ground, except perhaps when disturbed at night and are forced to fly down. They pair in the early part of the hot weather, when the peacock has then his full train of upper tail coverts to display to his wives. They lay in July and August. Eggs, pure white, a rich *café au lait* or reddish buff, with strong glossy shells pitted all over with minute pores. Size 2·55 to 3 × 1·92 to 2·2 inches.

**63. Pavo muticus**, *Linn., Syst. Nat.* i. p. 268; *Elliot, Mon. Phas.* i. pl. 5; *Hume, Str. F.* iii. p. 165; *Blyth and Wald., B. Burm.* p. 147; *Dav. et Oust. Ois. Chine*, p. 402; *Anders., Yunnan Exped.* p 668; *Hume and Dav., Str. F.* vi. pp. 425, 520; *Hume, Str. F.* vii. p. 455; viii. p. 110; *Hume and Marsh., Game Birds* p. 94, pl.; *Bingham, Str. F.* ix. p. 195; *Oates, Str. F.* x. p. 235; *Kelham, Ibis*, 1881, p. 529; *Oates, B. Br. Burm.* ii. p. 312; *Murray, Avif. Brit. Ind.* ii. p. 529, No. 1187.—The BURMESE PEAFOWL.

Crest of feathers webbed throughout their whole length; head, neck and breast brilliant green; scapulars, tertiaries and lesser wing coverts uniform and unbarred rufescent; facial skin blue above and round the eyes; deep yellow on the remainder of the face; wing coverts violet blue, edged with pale greenish yellow; quills rufescent. Legs and feet dark horny brown; irides dark brown.

*Length.*—To end of true tail 40 to 48 inches; train projects beyond end of tail from 24 to 44; wing 16·75 to 19·75; tail from vent 15·5 to 17·5; tarsus 5·5; bill from gape 1·95 to 2·5.

*Hab.*—British Burmah, extending north as far as Chittagong; east through Siam to Cochin-China, and south down the Malay Peninsula.

### Gen. Argusianus.—*Rafin.*

Bill short and strong; upper mandible deflected at the tip, convex; nostrils basal, lateral; head naked; tail long.

**64. Argusianus argus** (*Linn.*), *Oates, B. Br. Burm.* ii. p. 313. Phasianus argus, *Linn., Syst. Nat.* i. p. 272. Argusianus giganteus, *Bl., B. Burm.* p. 148. Argus giganteus, *Elliot, Mon. Phas.* i. pl. 11; *Hume and Dav., Str. F.* vi. p. 427; *Hume, Str. F.* viii. p. 110; *Hume and Marsh., Game Birds* i. p. 99, pl. Argusa giganteus, *Kelham, Ibis*, 1881, p. 530; *Murray, Avif. Brit. Ind.* ii. p. 50, No. 1188.—The ARGUS PHEASANT.

Head, cheeks, chin, and gular region naked and slaty blue; some bristly feathers on the occiput black, forming ear-like tufts; back of neck buffish, minutely spotted with black; lower neck, breast and upper back reddish chestnut, also minutely streaked and speckled with black; lower back and rump buffish, lighter on the rump; upper tail coverts dark vinaceous, thickly and closely variegated with ocelli. Wing coverts buffish, thickly freckled and speckled with dark brown; tertiaries longer than the primaries and beautifully ocellated; tail with the centre feathers much elongated; breast and upper abdomen ferruginous, finely vermiculated with ziz-zag lines. The female is duller in colour and wants the elongated tertials and tail feathers, otherwise as in the male.

Legs and feet from pale to bright red.

*Length of the Male.*—68 to 70 inches; tail about 50; wing to end of primaries 18; tarsus 4·7; bill from gape up to 2. *Length of Female.*—About 30 inches; tail 12; wing 17; tarsus 3·6; bill from gape up to 1·7.

*Hab.*—Tenasserim in the extreme south, where it was observed by Mr. Davison in the forests about Malewoon and Bankasoon and the higher portions of Pakchan. It extends down the Malay Peninsula, and is found in Sumatra. According to Davison they are confined entirely to he evergreen forests. The male and female live quite solitarily. The males, Mr. Davison says, have a peculiar habit of selecting a piece of ground some six or eight yards square, thoroughly cleaning it from all vegetation and rubbish, and taking up their quarters there. They, however, roost on trees at night. Food—fruit, ants, slugs, and insects generally.

### Gen. **Polyplectron**.—*Tem.*

Head sub-crested; bill less large and convex, more compressed, the tip deflected over the lower mandible; wing short; tail long; tarsus spurred.

**65. Polyplectron thibetanum** (*Gm.*), *Elliot, Mon. Phas.* i. pl. vi.; *Hume and Dav., Str. F.* vi. pp. 432, 521; *Hume, Str. F.* viii. p. 110; *Hume and Marsh, Game Birds* i. p. 105 pl.; *Bingham, Str. F.* ix. p. 195; *Oates, B. Br. Burm.* ii. p. 315. Pavo tibetanus, *Gmel., Syst. Nat.* i. p. 731. Polyplectron chinquis, *Temm., Pig. et Gall.* ii. p. 363; iii. p. 675; *Blyth and Wald., B. Burm.* p. 148; *Inglis and Hume, Str. F.* v. p. 40; *Murray, Avif. Brit. Ind.* ii. p. 531, No. 1189.—The Grey Peacock-Pheasant.

Crown of head subcrested, the feathers thick set; whole head and neck greyish brown, minutely freckled and stippled with brown; rest of upper plumage including the wings and tail dark brown, minutely freckled all over with greyish white; the feathers of the back, scapulars, tertiaries and wing coverts tipped with pale buff and each having near the tip a large roundish violet-blue spot, tinged with a coppery gloss next the buff tip. Each tail feather with a large oval metallic-green patch on each web, surrounded by a blackish and a buff ring; lower plumage pale ochraceous barred with brown. The *female* is similar, but duller in colour, the spots on the tail are small and inconspicuous, and those on the tail coverts altogether absent. (*Oates.*) Bill with the upper mandible and the tip of the lower one black; rest of the bill and facial skin pale yellow; irides white; legs and feet blackish; in the female dark plumbeous; the bill horny brown; and the facial skin pale dingy fleshy yellow. (*Davison.*)

*Hab.*—The dense hill forests of the Indo-Burmese region, its furthest limits northwards and westwards being the Buxa Doars and the outer slopes of the Bhootanese Himalayas. Eastwards it is not rare in suitable localities in the Eastern Doars, northern portions of Goalpara, Kamrup, and Durrang, and Hume adds possibly, further east. South of the Brahmaputra it occurs in the Garo, Khasia and Naga hills, in Sylhet, Cachar, Hill Tipperah, Chittagong, Arrakan, Pegu and Tenasserim as far south as Tavoy. A closely allied species, *P. bicalcaratum*, is said to have occurred at Mergui, but this requires confirmation. Hume, however, says that from the southern boundary of Tenasserim to the extreme south of the Malay Peninsula it certainly occurs, and that it may yet prove to occur in the higher hills of Southern Tenasserim.

## **Family**.—MEGAPODIDÆ.

Birds with large legs and feet, commonly known as Mound-birds; facial skin nude; head crestless; tail short; tarsi thick and strong; hind toe on the same plane as the anterior one. Eggs large, laid in a mound of earth, heaped up by the parent birds.

### Gen. **Megapodius**.—*Lin.*

Characters the same as those of the family.

**66. Megapodius nicobariensis,** *Blyth, J. A. S. Beng.* xv. p.; *Hume, Str. F.* i. p. 82; iii. pp. 276, 499; *id., Nests and Eggs Ind. B.* iii. p. 517; *Hume and Marsh., Game Birds Ind.* i. p. 110; *Murray, Avif. Brit. Ind.* ii. p. 532, No. 1190.—The NICOBAR MOUND BIRD OR MEGAPODE.

Upper and lower surface of the body dull chocolate brown, darker on the back and lower abdomen, slightly tinged with rufescent on the lesser, median and greater wing coverts, and greyer on the breast; all the feathers margined lunately with black; primaries (3—4) yellowish, edged with black; top of head greenish brown; lores, orbital and aural region and visible portions of the skin of the neck from a light somewhat dull cherry red to a bright brick red. Legs and feet dark greenish horny; scuta somewhat paler; soles of the feet pale carneous; knee brick red; bill light greenish horny.

*Length.*—14·5 to 17 inches; wing 8·5 to 9·5; tail 2·75 to 3·5; tarsus 2·6 to 2·75; bill at front 0·94 to 1·1.

*Hab.*—The central and southern portions of the Nicobar Islands. According to Hume, the Nicobar Megapode never wanders far from the seashore, and throughout the day keeps in thickish jungle a hundred yards or so above water mark. They come out generally at dusk and in the early dawn. Generally met with in pairs, coveys and flocks of from thirty to fifty, and Mr. Hume adds that they are unsurpassed. "The flesh is white, very sweet and juicy, loaded with fat, is delicious, a sort of *juste milieu* between that of a fat Norfolk turkey and a fat Norfolk pheasant." The eggs too, he says, are quite equal if not superior to those of the Peafowl. Eggs, 10—18 in number, elongated ovals, pointed towards one end, whitish, of a chalky texture, varying in size from 3·01 to 3·4 in length and from 1·9 to 2·25 in breadth.

## **Sub-Family**.—PHASIANINÆ.

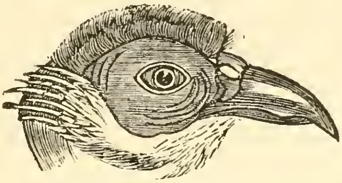
Tail typically long, with the central feathers of great length; plumage rarely ocellated; head more or less crested. Includes (*Monaul*), the Horned, Gold and Silver, Snow and Blood pheasants, Firebacks and Jungle fowl.

### Gen. **Crossoptilon**.—*Hodgs.*

Bill strong, broadly convex; upper mandible longer than and overlaying the lower mandible; cere and facial skin nude; nares basal; wing with the 6th

quill longest ; tail ample, of 18 feathers ; upper tail coverts long, and covering the tail feathers ; tarsi nude, scutate before and behind ; males only with a spur.

**67. Crossoptilon thibetanum,** *Hodgson, J. A. S. B.* 1849 ; *Hume and Marsh., Game Birds Ind.* p. 115, pl. ; *Tickell, Field* iii., 1886, p. 170. Crossoptilon drouyni, *Verr., Murray, Avif. Brit. Ind.* ii. p. 533, No. 1191.—HODGSON'S EARED PHEASANT.



Head of Crossoptilon thibetanum.

Top of the head black, the feathers narrow, short, erect, velvetty and thick set ; cheeks and facial skin nude and red ; wings short, stiff, bowed and rounded ; quills blackish on their outer webs ; lesser and median wing coverts greyish ash, tinged with blue ; upper plumage bluish hoary, paler and tinged with yellowish on the lower surface ; alar and caudal plumes dusky or black, glossed more or less with changeable blue ; bill dull ochreous red. (*Hodgson.*)

*Length.*—38 to 40 inches ; tail 19 to 20 ; wings 12·5 ; tarsus 4·12 ; bill 1·62.

*Hab.*—Nepaul. Mr. Hume figures this bird in his "Game Birds of India," and though he says it could hardly claim to be included in the Indian Avifauna, I have (owing to the rarity of the species, and the remarks of Colonel Tickell in a note by Mr. Hume,) given a description of it in the event of the bird being found, as Colonel Tickell surmises, nearer Nepaul.

### Gen. **Lophophorus,** *Temm.*

Head crested, the shafts of the feathers bare except at the tip ; orbits bare ; bill somewhat lengthened, the tip deflected ; tarsus spurred ; tail short. Plumage rich metallic green and gold.

**68. Lophophorus Impeyanus** (*Lath.*), *Gould, Cent. Him. Birds*, pls. 60, 61 ; *id., B. Asia* pt. ii. pl. 7 ; *Jerd., B. Ind.* iii. p. 510, No. 804 ; *Hume and Marsh., Game Birds of Ind.* i. p. 125 ; *Murray, Avif. Brit. Ind.* ii. p. 533, No. 1192.—The MONAUL PHEASANT.

Head, including the crest, also the throat, brilliant metallic green ; back of the neck brilliant iridescent purple, passing into bronzy green, and all with a golden gloss ; upper back and wing coverts, also the rump and upper tail coverts richly glossed with purple and green, the latter colour prevailing on the wings and furthest tail coverts. Middle of back white ; quills black ; tail cinnamon rufous ; whole lower surface black, glossed on the throat with green and

purple, dull and unglossed elsewhere. Bill dark horny; naked orbits blue; irides brown; legs dull ashy green. (*Jerd.*)

*Length.*—27 to 29 inches; wing 11 to 12·2; tail from vent 9·5 to 10·5; tarsus 2·7 to 3; bill from gape 1·9 to 2. Females are smaller. The female has the chin and throat white, the rest of the body pale buffy brown, with dark brown spots, bars and undulations; secondaries barred black and rufous; tip of tail and external margin of tail coverts whitish. Bill blackish; legs dusky greenish.

*Length.*—24 to 26 inches; wing 10·3 to 11; tarsus 2·65 to 2·7; bill 1·3.

*Hab.*—The western borders of Cashmere to the more western portions of Bhootan, and throughout the Himalayas, as far east as Sikkim. Jerdon says in Sikkim it is not found at a lower elevation than 10,000 feet. Common about Mussoorie at one time, and also about Simla. Breeds throughout the forest-clad ranges of the Himalayas during May and June. The eggs are laid in a bare depression in the ground under the shelter of some overhanging rock, or the massive root of some large tree. The eggs, 4 to 6 in number, are long ovals, a good deal compressed at one end; the ground colour is buffish white thickly and coarsely freckled all over, especially in the middle, with deep reddish brown. Size from 2·41 to 2·69 in length by 1·7 to 1·89 in breadth.

**69. Lophophorus Sclateri,** *Jerd.*, *Ibis*, 1870, p. 147; *id.*, *J. A. S. Beng.* 1870, p. 61; *Sclater*, *P. Z. S.* 1870, p. 162, pl. xiv.; *Elliot*, *Mon. Phas.* i. pl. xx.; *Hume*, *Game Birds*, p. 135, pl. Lophophorus (Chalcophasis) Sclateri, *G. R. Gray*, *Hand List B.* ii. p. 261. Chalcophasis Sclateri, *Gould*, *B. Asia* vi. pl. 70; *Murray*, *Avif. Brit. Ind.* ii. p. 534, No. 1193.—SCLATER'S CRESTLESS MONAUL.

Top of head covered by a short recurved green crest; occiput, cheeks, throat and entire under parts deep velvetty black; back of neck red, becoming orange yellow on the lower part; back and wings metallic green, with blue and purple reflections; shoulders reddish bronze; primaries brownish black; rump white with mesial black lines; upper tail coverts white; tail deep chestnut tipped broadly with white; facial skin deep blue, with short, black hair-like feathers; legs and feet brown; bill greenish horn.

*Length.*—27 inches; wing 12·4; tail 9·0; bill at front 1·3; from gape 1·95; tarsus 3·2; irides brown.

*Hab.*—East and South-East of Sadiya. Nothing is known of its habits.

### Gen. Ceriornis.—*Swainson.*

Bill rather short; head with two small erectile fleshy horns behind the nude orbits; crown crested; throat with extensile gular wattles; tail short, broad, of 18 feathers; tarsi short.

**70. Ceriornis satyra** (*Linn.*), *Gould*, *Cent. Him. B.* pl. 62; *Jerd.*, *B. Ind.* iii. p. 516, No. 805; *Hume and Marsh.*, *Game Birds* i. p. 137.

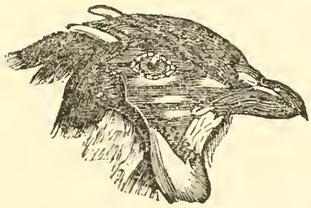
Meleagris satyra, *Linn.*, *Syst. Nat.* i. p. 717. Satyra Lathami (*Gray*), *Hardwick, Ill. Ind. Zool.*, pls. 49, 51; *Murray*, *Avif. Brit. Ind.* ii. p. 535, No. 1194.—The Sikkim Horned Pheasant or Indian Crimson Tragopan.

Forecrown, nape, and sides bordering the nude parts black; crest formed of slender hair-like feathers black basally and red terminally; back, rump, wings and upper tail coverts brown, finely barred with black and with white ocelli; wing coverts and sides of the rump brown, the ocelli on a maronne-red spot at the tip of each feather; shoulder of wing bright fiery red; tail black, barred narrowly with rufous; sides and back of the neck, the breast, and under surface of the body rich crimson red, with white, black-edged spots. Bill brown; orbits, horns and nude parts fine blue; wattles blue, with crimson bars when excited; irides deep brown; legs yellowish brown.

*Length of Males.*—26·5 to 28·5; wing 10 to 10·6; tail 10 to 11·5; tarsus 3·25 to 3·75; bill from gape 1·4 to 1·5. *Females*—21·5 to 23·75; wing 8·5 to 9; tail 8 to 10; tarsus 3 to 3·25; bill from gape 1·25 to 1·45.

*Hab.*—The higher wooded ranges of the Central and Eastern Himalayas, westwards to Kumaon and the western portions of Garhwal. Found in suitable localities throughout Nepaul and Sikkim and well into Bhootan. Occurs also in the Dafla Hills and in the vicinity of Darjeeling. Breeds at elevations of from 9,000 to 12,000 feet in the forests that lie below the snow. Eggs, in size, are like large hen's eggs, white, freckled with dull lilac.

**71. Ceriornis melanocephalus** (*Gray*), *Gould*, *Cent. Him. B.* pls. 63, 64, 65; *Jerd.*, *B. Ind.* iii. p. 517, No. 806; *Hume and Marsh.*, *Game Birds* i. p. 143. Phasianus nipalensis (*Gray*, *the female*), *Hardw.*, *Ill. Ind. Zool.* i. pls. 46, 47, 48 and 2 pl. 40; *Elliot*, *Mon. Phas.* i. pl.; *Murray*, *Avif. Brit. Ind.* ii. p. 535, No. 1195.—The Simla Horned Pheasant or the Western Tragopan.



Head of Ceriornis melanocephalus.

Head black, crest tipped with red; nape, the back and sides of neck dark red; back and upper parts dark brown, minutely barred irregularly with black, each feather with a round white spot on a black ground; shoulder of wing dark red; quills blackish, mottled and barred with brown; some of the wing coverts with dusky olive spots; tertiaries mottled like the back and like the scapulars have a large white spot; upper tail coverts lengthened, the lateral

feathers with a large fulvous tip edged with dull black and white spotted; tail black, unspotted towards the tip, but barred with white, brown for the greater part of its length; beneath, the throat and neck below the wattle vivid scarlet, passing into flame colour and yellow on the lower part of the neck; breast and lower parts black, dashed with dull red, and each feather with a round white spot; thigh coverts mottled black and brown, paler and yellowish near the joint. Bill blackish; irides hazel brown; orbits bright red; fleshy horns pale blue; gular wattles purple in the middle, spotted and edged with pale blue and fleshy on the sides; legs and feet fleshy.

*Length.*—27 to 29 inches; wing 11·25; tail 10·5 to 11; tarsus 3.

The female has the head and all the upper parts mottled with dark and light brown and blackish with small pointed streaks of pale yellow; quills and tail dark brown, minutely mottled and barred; under surface light ashy brown, powdered with blackish and marked with irregular spots of white; fleshy horns and wattles absent.

*Hab.*—Western borders of Nepaul to the extreme N.-W. Himalayas. It is found about Simla and Mussoorie, but more abundant near Almora. It is not a very rare species, and is very easily reared in captivity, as well as easy to shoot. They feed chiefly on berries, but insects also form part of their food. They begin to pair in April. Eggs have been obtained in May at from 8,000 to 11,000 feet elevation. They are, according to Hume, elongated ovals considerably compressed towards the small end, and about the size of the egg of the Monaul. The shell is devoid of gloss, and vary in colour from a pale *café au lait* to a dull reddish buff. Size from 2·4 to 2·55 by 1·68 to 1·72.

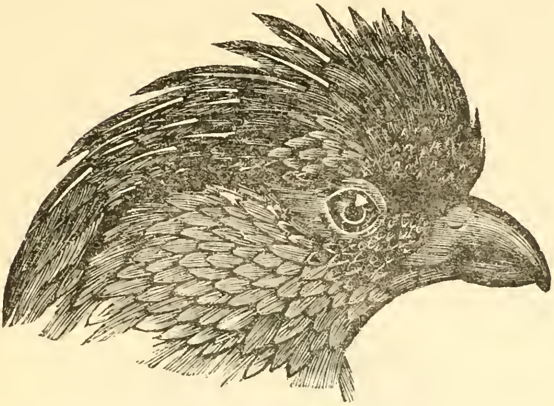
*Ceriornis Blythi*, *Jerd.*, *J. A. S. Beng.*, 1870, p. 60; *Gould, B. Asia* vii. pl. 47, is another species of which much is not known. It is said to occur in the Naga and Assam hills: the forecrown and occiput is black; lores, orbital region, cheeks, chin, throat and nude parts adjoining golden yellow; back of the head, neck all round and breast bright brick red or lake; a black post orbital and gular band; upper surface of the body rich maroon red, with white ocelli on a black ground at the tip of each feather; flanks more yellowish; belly grey; tail dark brown.

## Gen. **Ithaginis**—*Wagler.*

Bill short, stout; tail of 14 feathers; tarsus of male with several spurs; head sub-crested; neck feathers elongated.

**72. Ithaginis cruentus** (*Hardw.*), *Gould, B. Asia*, pt. iii. pl. 3; *Jerd., B. Ind.* iii. p. 522, No. 807; *Elliott, Mon. Phas.* i. pl. 10; *Hume and Marsh., Game Birds* i. p. 155. Phasianus cruentus, *Hardw., Linn.*

*Trans.* xiii. p. 237. Phasianus Gardneri, *Hardw.* (the female).—The GREEN BLOOD PHEASANT.



Head of Ithaginis cruentus.

Forehead black; crown buff; crest dull grey, with a mesial streak of buff; lores and cheeks, also a broad ring round the red orbital region black; base of the bill, chin and throat blood red; lower throat brownish to black, with a mesial stripe of greenish buff down each feather; ear-coverts black, with buffish striæ; hind neck and upper surface of the body dark grey, each feather striped mesially with buff, which is again bounded by black; wing coverts the same; tail grey, passing into greyish-white at the tips; the shafts white and the basal three-fourths of the feathers broadly margined with blood red; breast, sides of the abdomen and flanks pale green with lighter shafts; breast feathers with a blood red spot near the centre of either margin; centre of abdomen, thighs and vent dark brownish grey, with a greenish mesial stripe bounded by black; under tail coverts deep blood red, tipped with pale yellow.

Bill brownish, black at tip and red at the base; irides brown; legs and feet coral red.

*Length.*—16 to 17 inches; wing 8·5; tail 6·5; tarsus 2·75.

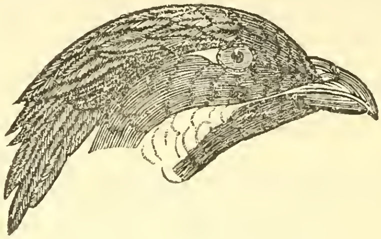
The *female* has the forehead, cheeks and chin, bright rusty yellow; upper parts ferruginous brown mottled very finely with blackish; first primary plain dark brown, the others and the tail dark brown, freckled finely with blackish; lower parts brighter ferruginous brown than the back; under tail coverts and vent mottled with brown.

*Hab.*—S.-E. Himalayas, in Nepaul and Sikkim, more abundant in the latter, affecting ranges from 10,000 to 14,000 feet. According to Hodgson they are not rare. In November and December numbers are caught. They ascend and descend with the snow, and are easily captured, being fearless and stupid.

## Gen. **Pucrasia**—*Gray.*

Bill short; head double-crested; tarsus spurred; toes slender, long; tail long, of 16 feathers.

**73. Pucrasia macrolopha** (*Lesson*), *Gould, Cent. Him. B.* pls. 69, 70; *id., B. Asia, pt.* vi. pl. 4; *Jerd., B. Ind.* iii. p. 524; *Elliot, Mon. Phas.* 1 pl.; *Hume and Marsh., Game Birds* i. p. 159; *Murray, Avif. Brit. Ind.* ii. p. 537, No. 1196. Pucrasia nipalensis, *Gould, Cent. Him. B.* pl. 6; *Hardw., Ill. Ind. Zool.* pl. 40; *Hume, Str. F.* vii. p. 428; *Hume and Marsh., Game Birds* i. p. 165. Pucrasia castanea, *Gould, B. Asia,* pt. vi. pl. v.; *Hume, Str. F.* v. p. 138; vii. pp. 124, 428.—The KOKLASS PHEASANT.



Head of Pucrasia macrolopha.

Head glossy dark green, the crown and medial crest ashy brown; the lateral feathers of the crest dark green and from 4 to 4·2 inches long; an oblong patch of white on each side of the neck; upper surface of the body light ashy, each feather with a mesial streak of black; wing coverts light chestnut brown, the feathers with black patches; upper tail coverts light ashy; tail chestnut brown, tipped with black and narrowly edged with whitish; chin and throat black, also the upper edge of the oblong white neck patch; breast and centre of abdomen deep chestnut; flanks ashy; vent chestnut, tipped with white. Bill black; irides dark brown; legs and feet ashy.

*Length.*—24 inches; wing 10; tail 12; tarsus 2·5.

The plumage of the female is pale yellow brown above, variegated and banded with dark brown chestnut, and pale yellowish; chin and throat yellowish white; under surface of the body yellowish-chestnut, with dark brown markings, paler along the abdomen and darker on the flanks.

*Length.*—20 inches; wing 8·1 to 8·6; tail 7 to 7·5; tarsus 2·2 to 2·5.

Irides deep brown; bill dusky black, yellowish horny at the tip of upper and base of lower mandible; legs and feet dusky plumbeous.

*Hab.*—N.-W. Himalayas, from the west of Nepaul to beyond Simla, extending probably into the Bhootan Himalayas. It is said to be common to the whole of the wooded regions from an elevation of about 4,000 feet to

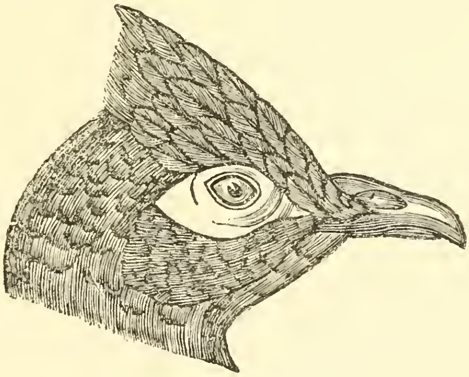
nearly the extreme limits of forest, but more abundant in the lower and intermediate ranges, where its favourite haunts are wooded ravines and hill sides where oak and chestnut are plentiful. It is found singly or in pairs. There is much difference of opinion as to whether it is good eating, but all agree that it affords good sport. Hume says the spot for Koklass is either some depression or saucer-like valley, or some place in a gorge where a horizontal plateau is thrown out inside the gorge. October and November are said to be good months about Mussoorie for Koklass.

It feeds chiefly on leaves and buds, also roots, grubs, acorns and berries. Breeds in May throughout the Himalayas in all well-wooded localities within the limits above indicated. Eggs, 6—9, oval, more or less pointed towards the small end; of a rich pale buff colour, densely and thickly speckled and spotted, or boldly and thinly blotched and splashed with deep reddish brown. They vary in size from 1·85 to 2·29 in length, and from 1·39 to 1·57 in breadth.

## Gen. Phasianus.—*Linn.*

Tail long, cuneate, of 18 feathers; cheeks naked; tarsi spurred in the males.

**74. Phasianus Wallichii** (*Hardw.*), *Gould*, *Cent. Him. B.* pl. 68; *Jerd.*, *B. Ind.* iii. p. 527; *Hume and Marsh.*, *Game Birds* i. p. 169; *Elliott*, *Mon. Phas.* i. pl.; *Murray*, *Avif. Brit. Ind.* ii. p. 539, No. 1197.—The Cheer Pheasant.



Head of Phasianus Hardwickii.

Head with a crest composed of a few long hair-like feathers and dark ashy in colour; neck pale ashy, barred narrowly with dusky black; back and scapulars and rump pale reddish chestnut, barred with bluish black; tail with the two long middle feathers pale yellow, broadly barred and speckled with black; the rest barred with pale yellow, black, and dark chestnut; chin

soiled buffish; throat and breast yellowish ashy, with a few broken black bars; abdomen dusky; wing coverts yellowish ash, with curved black bars and shining golden spots in some feathers; primaries dusky, with a few pale yellow bars; thigh coverts and vent yellowish chestnut marked with dusky. Bill pale horny; nude orbits bright red; irides yellowish hazel; legs and feet brown.

*Length.*—34 to 40 inches; wing 9·6 to 10·4; tail 20 to 23·0; tarsus 2·8 to 2·95; bill from gape 1·35 to 1·45. The females are 24 to 29·5 in length, with a wing of 8·8 to 9·5, and tail of 13·5 to 15·5.

*Hab.*—W. and N.-W. Himalayas, Nepaul, Garhwal, Dehra Dhoon, and about Chamba. "Mountaineer," according to Jerdon, says that it is an inhabitant of the lower and intermediate ranges, seldom found at very high elevations and never approaching the limits of forest. They are confined to particular localities, and not like other pheasants scattered indiscriminately over almost every part of the regions they inhabit. Grassy hills, scattered oak forests, sites of deserted villages and long grass in precipices are the haunts of this species. In the interior they are often found in the immediate vicinity of villages in flocks of 5 and 6. During the day they sit concealed, and only issue out in the morning and evening to feed. They run fast and lie very close and are flushed within a few yards. "Mountaineer" says he has knocked them over with a stick and even taken them with his hand; they feed chiefly on roots, grubs, insects, seeds and berries. The Cheer breeds throughout the lower ranges of the Himalayas during April, May and June, making a nest in grass or grass tufts. The eggs are of a pale stone colour, almost devoid of markings, but generally there are some few specks of red at one end. Size, from 2·05 to 2·22 inches × 1·4 to 1·56.

### Gen. **Euplocamus**.—*Temm.*

Head more or less crested; orbits naked, red; plumage glossy black and white; feathers of the neck and breast hackled; tail moderately long, of 16 feathers, divaricated, raised in the centre, as in Jungle fowl, and held demi-erect, the feathers curving outwards and drooping. (*Jerd.*)

**75. Euplocamus albocristatus** (*Vigors*), *Gould, Cent. Him. B.* pls. 66, 67; *Hume, Str. F.* iv. 42; *id., Str. F.* vii. p. 429; *Hume and Marsh., Game Birds* i. p. 178; *Murray, Avif. Brit. Ind.* ii. p. 540, No. 1198. Phasianus Hamiltoni (*Gray*), *Hardw., Ill. Ind. Zool.* i. pl. 41. Gallophasis albocristatus (*Vigors*), *Jerd., B. Ind.* iii. p. 532.—The White-crested Kalij Pheasant.

A long crest of decomposed feathers white; head, neck, wings and tail glossy bluish-black; lower back dull white; *rump and upper tail coverts broadly tipped white;* throat and *breast greyish white, the feathers sharp-pointed;* abdomen and vent dark grey. Bill greenish white, dusky at the tip; irides orange brown; nude orbits bright scarlet to deep crimson, dotted here and there with tiny tufts of abortive black feathers; legs and feet livid white

with a purplish or brownish tinge. The *female* is of a light brown colour throughout, each feather being tipped with pale whity brown; chin whitish; lateral tail feathers dark brown.

*Length—Males*—24 to 29 inches; wing 8·7 to 10; tail 10·2 to 13; tarsus 2·9 to 3·1; bill from gape 1·3 to 1·55. *Females—Length*—20 to 23 inches; wing 8 to 8·3; tail 7·8 to 9.

*Hab.*—N.-W. Himalayas, as far as Nepaul in the westernmost portions. Hume says, throughout the fairly-wooded lower and middle ranges of the Himalayas from Kumaon to Hazara; also occurs in the Siwaliks, in some places very abundantly. Usually three or four are found together, and sometimes as many as a dozen. It feeds on roots, grubs, insects, seeds and berries, and the leaves and shoots of shrubs. Thick clumps of bushes near the banks of rivers are its favourite haunts. It breeds everywhere in the Himalayas, according to Hume, south of the first snowy range from the borders of Afghanistan to those of Nepaul; also in the Dhoon and at Simla from April to June. There is no regular nest, except a pad, with a slight depression, made of leaves, fine grass and coarse roots. Eggs, 9 to 14 in number, oval, moderately elongated, a good deal pointed towards one end, glossy and closely pitted with minute pores. In colour they vary from a pale creamy buff to a rich reddish buff, often thickly speckled with minute white spots. Size from 1·85 to 2·03 × 1·25 to 1·52.

**76. Euplocamus leucomelanus** (*Lath.*), *Hume, Str. F.* vii. p. 428; *id. and Marsh., Game Birds Ind.* i. p. 185; *Murray, Avif. Brit. Ind.* ii. p. 541, No. 1199. Phasianus leucomelanus, *Lath., Ind. Orn.* ii. p. 633.—The Nepaul Kalij.

Differs from *albocristatus* in having a black crest and more narrowly white tipped rump and upper tail coverts. Bill greenish horny; irides dark brown; orbital skin fine crimson red and papillated; legs and feet pale brownish.

*Length.*—23 to 26 inches; wing 8·7 to 9·2; tail 10·9 to 12·3; tarsus 2·8 to 3·05; bill from gape 1·25 to 1·37. Females 19·3 to 20·5; wing 7·8 to 8·5; tail 7·3 to 8·5; tarsus 2·3 to 2·9; bill from gape 1·2 to 1·3.

*Hab.*—Nepaul, ranging just inside the limits of British India.

**77. Euplocamus melanonotus** (*Blyth*), *Jerd., B. Ind.* iii. p. 534; *Hume, Str. F.* v. p. 42; *id.*, p. 124; *id. and Marsh., Game Birds Ind.* i. p. 192; *Murray, Avif. Brit. Ind.* ii. p. 541, No. 1200.—The Black-backed Kalij.

Differs from *leucomelanus* in having the rump and upper tail coverts entirely black. Bill, legs and feet as in the last.

*Length.*—21 to 25 inches; wing 8·9 to 9·5; tail from vent 9·5 to 12·3; tarsus 3·05 to 3·2; bill from gape 1·28 to 1·36. *Females—Length.*—18 to 21 inches; wing 8·1 to 8·8; tail 7·5 to 8·6; tarsus 2·7 to 2·9; bill from gape 1·15 to 1·25.

*Hab.*—Sikkim, and the Eastern parts of Bhootan. According to Jerdon it is the only Pheasant common in Darjeeling at all elevations between 2,000 and 7,000 feet. Breeds during March, April, and May. Eggs, 8—10 in number, similar to those of other species. Size 1·79 to 2 inches by 1·4 to 1·54.

**78. Euplocamus horsfieldi** (*G. R. Gray*), *Hume, Str. F.* v. p. 42; vii. p. 429; *Hume and Marsh., Game Birds Ind.* i. p. 197; *Murray, Avif. Brit. Ind.* ii. p. 541, No. 1201.—The Black-breasted Kalij.

Differs from *albocristatus*, *leucomelanus* and *melanonotus* in having the breast black, with rounded instead of lanceolate feathers, and the rump and upper tail coverts broadly tipped with white. Bill greenish horny, paler at tip, dusky towards the base; nude orbital skin crimson; irides reddish brown; legs and feet plumbeous.

*Length, Males.*—23 to 24 inches; wing 9 to 10; tail 9 to 10·75; tarsus 3·2 to 3·25; bill from gape 1·37 to 1·5.

*Length, Females.*—21 to 22·5 inches; wing 8·5 to 8·9; tail 7·75 to 8·5; tarsus 3 to 3·05; bill from gape 1·15 to 1·3.

*Hab.*—Cachar and around the bases of and up to four thousand feet elevation on the Khasia and Garo hills; thence eastwards in suitable localities right up the valley of Assam to beyond Sadiya. Has been met with in Eastern Bhootan and in the lower ranges of the Dafla hills, also in Tipperah and Northern Chittagong. Dilkusha, Sylhet and Cachar are districts in which they are fairly abundant. (*Hume.*) Breeds in April and May. Eggs of the usual type.

**79. Euplocamus lineatus,** *Elliot, Mon. Phas.* ii. pl. 23 (pt.); *Hume, Nests and Eggs Ind. B.* p. 525; *id., Str. F.* iii. p. 165; *Anders., Yun. Exped.* p. 669 (part); *Hume and Dav., Str. F.* vi. p. 436; *Hume, Str. F.* viii. p. 110; *Hume and Marsh., Game Birds* i. p. 205, pl.; *Bingham, Str. F.* ix. p. 195; *Oates, Str. F.* x. p. 236; *Oates, B. Br. Burm.* ii. p. 316; *Murray, Avif. Brit. Ind.* ii. p. 542, No. 1202. Phasianus lineatus, *Lath. in Vigors, P. Z. S.* 1831, p. 24. Nycthemerus lineatus, *Blyth and Wald., B. Burm.*, p. 149. Gennæus lineatus, *Oates, Str. F.* v. p. 164.—The Lineated Silver Pheasant.

Whole head, including crest, also the chin, throat and lower plumage black; sides of breast and body streaked with white; forehead and feathers above the red facial skin stippled with white dots; sides of the head and neck, also the hindneck and the whole of the upper plumage and wing coverts black, finely and closely vermicellated with white; wings and tail the same, but the wavy bars of white broader; central pair of tail feathers almost entirely white on the inner webs. Younger males have more white streaks on the lower plumage extending to the whole breast and abdomen. The *female* has the forehead, crown and crest olive brown tinged with rufous; chin and throat grey; sides and back of the neck olive brown, streaked with white; front of the neck

pale chestnut with white streaks, the remaining lower plumage rich chestnut streaked with white; base of the hind neck and the back olive brown with white arrow-head-shaped marks; wings, coverts, lower back, rump and the shorter upper tail coverts olive brown, the feathers edged paler; longer upper tail coverts yellowish white, barred with black; six outer pairs of tail feathers blackish, broadly barred with white, each white bar having another black bar within it; between the white bars there are marks of chestnut; the next pair similar, but the terminal half of the inner web yellowish, vermiculated with black; central pair wholly yellowish white on inner web, the outer web vermiculated with black. In the male the irides are reddish hazel; bill green, turning to dusky at the tip and at the base of the culmen; bare skin of the head rich crimson; legs plumbeous brown; claws pale horn; spur dark brown. (*Oates.*)

*Length.*—27 inches; wing 9·3; tail 12·5; tarsus 3·2; bill from gape 1·35.

*Female, Length.*—20 inches; wing 8·5; tail 7·5; tarsus 3; bill from gape 1·3.

*Hab.*—British Burmah. Confined to Pegu, Tenasserim, north of Tavoy, the south-western portions of Independent Burmah, and the N.-W. portions of Siam. Hume says it is not a bird of high elevations. It is numerous at from 1,000 to 3,000 feet. It is almost omnivorous, and feeds according to season and locality on all kinds of berries, young leaves, green shoots and flower buds. The breeding season commences in March and is over by the end of April. The nest is merely a hollow scratched in the ground and thinly lined and sprinkled with dry leaves, placed under a shrub, or at the foot of a large tree. Eggs, 7—8, of a pinkish stone colour, minutely pitted all over. Size, 1·81 to 2·03 by 1·4 to 1·52 in width.

**80. Euplocamus Cuvieri** (*Temm.*), *Oates, Str. F.* iii. p. 343; *Hume, Str. F.* viii. p. 110; *Hume and Marsh., Game Birds* i. p. 201, pl.; *Sanderson, Str. F.* viii. p. 493; *Oates, B. Br. Burm.* ii. p. 318; *Murray, Avif. Brit. Ind.* ii. p. 543, No. 1203. Lophophorus Cuvieri (*Temm. Pl. Col.*), *Hume, Str. F.* iii. p. 166 (note). Nycthemerus Cuvieri, *Blyth, B. Burm.* p. 149.—The ARRACAN SILVER PHEASANT.

Like *E. lineatus*, but with no white streaks on the lower plumage, the breast is strongly tinged with deep blue, and a tinge of blue runs all through the upper plumage; rump and upper tail coverts with broad white margins; vermiculations on the upper plumage are not so frequent nor so white, and there is less white on the tail. The *female* is also like the female of *E. lineatus*, but differs in having the feathers of the upper plumage margined paler; the white stripes on the lower surface are reduced in breadth, are buffy in colour, and are almost entirely confined to the breast; the whole back and wings are a more or less rich rufous-olivaceous-brown everywhere, closely freckled with blackish brown; tail rufous, pale on the central tail feathers, deep chestnut on the four exterior ones, and freckled only on the inner webs.

*Length.*—25 inches; tail 11·2; wing 9·3; tarsus 3·4; bill from gape 1·6. The *female*—wing 8·5; tail 8·8.

*Hab.*—Arracan Hills, extending northwards to Chittagong. Habits same as last.

**81. Euplocamus Andersoni**, *Elliot, P. Z. S.* 1871, p. 137; *Anderson, Yunnan Exped.*, p. 670, pl. liii.; *Elliot, Mon. Phas.* ii. pl. 22; *Oates, B. Br. Burmah*, ii. p. 319; *Murray, Avif. Brit. Ind.* ii. p. 543, No. 1204. Euplocamus Crawfurdi, *Hume and Dav., Str. F.* vi. pp. 437, 521; *Hume, Str. F.* viii. p. 110; *Hume and Marsh., Game Birds* i. p. 203, pl.—ANDERSON'S SILVER PHEASANT.

Upper parts black, each feather having three or four white irregular lines, running parallel to and meeting towards the edges; secondaries black, with broken irregular black lines, running lengthwise with the feather; feathers of the rump like the back, but fringed with white, which overlaps the feather beneath and gives this part a beautiful silvery appearance; top of head, lengthened crest and entire under parts deep rich blue; tail moderately long, middle feather white, thickly covered with rather broad irregular black lines, these most numerous on the outer web and towards the base, becoming less on the inner web, and disappearing entirely at the tip and on the edge of inner web; rest of tail feathers black, with fine broken lines of white, these disappearing towards the tips; primaries dark brown, marked with white lines. (*Elliott.*) Hume says the characteristic points in which typical *E. Crawfurdi* = *E. Andersoni* differs from *E. lineatus* are, first, the much coarser and bolder character of the markings of the upper surface, which are all longitudinal and more or less parallel to the margins of the feathers, which are entirely free from the fine more or less transverse markings or mottlings characteristic of *E. lineatus*; second, in the whole of the central tail feathers, except just at the tip and margins of the inner webs, being boldly variegated black and white, instead as in *E. lineatus* almost the whole of the inner webs and the terminal half at any rate, of the outer webs being white or sullied white free from markings, and such markings as exist on the basal portions being fine. Bill pale bluish horny; facial skin deep crimson; legs and feet dark pinkish fleshy; irides brown. (*Davison.*)

*Length.*—30 inches; tail 13·5; wing 11·5; tarsus 3·62; bill from gape 1·55.

*Hab.*—Tenasserim proper, in the hills at the N.-E. extremity. Dr. Anderson also procured specimens on the confines of Upper Burma and Yunnan.

**82. Euplocamus Vieilloti** (*G. R. Gray*), *Sclater, P. Z. S.*, 1863, p. 118; *Hume and Dav., Str. F.* vi. p. 438; *Hume, Str. F.* viii. p. 110; *Kelham, Ibis*, 1881, p. 532; *Oates, B. Br. Burm.* ii. p. 320; *Murray, Avif. Brit. Ind.* ii. p. 544, No. 1205. Gallophasis Vieilloti, *G. R. Gray, Gen. B.* iii. p. 498. Euplocamus ignitus, *Elliot, Mon. Phas.* ii. pl. 26 (part); *Blyth, B. Burm.*, p. 149; *Elliot, Ibis*, 1878, p. 124 (part).—VIEILLOT'S FIRE-BACK PHEASANT.

General colour of the plumage, including crest, metallic violet blue; sides of the body streaked with white; centre of abdomen and vent, secondaries and lateral tail feathers black; lower back and rump glistening fiery chestnut; primaries brown; central pair of tail feathers white, the next pair white, with the basal half of the outer web brown. The *female* has the whole upper plumage chestnut; the chin and throat albescent; the front and sides of the neck streaked with white; the head, hind neck and upper back plain; all the other parts finely vermiculated with black; breast black, the feathers with chestnut tips and white margins; upper abdomen, sides of the body and thighs black, the feathers margined with white; lower abdomen and vent white; under tail coverts chestnut. Bill whitish to horny brown; facial skin smalt blue; legs and feet vermilion red; irides pale red.

*Length.*—27·5 to 29 inches; tail 10 to 10·5; wing 10·75 to 12·12; tarsus 4·25 to 4·4; bill from gape 1·6 to 1·8. *Female*—23 to 24 inches; tail 7·5 to 9; wing 9·7 to 10·75; tarsus 3·5 to 3·75; bill from gape 1·6 to 1·7.

*Hab.*—Tenasserim, in the south, extending down the Malay Peninsula. According to Davison it frequents thick evergreen forests in small parties of five or six, feeding there on berries, tender leaves, and insects. Hume says they appear to breed in the monsoon. The only egg he obtained was laid by a captured hen in July. The egg is simply like a large game fowl's egg.

## Sub-Family—GALLINÆ.

Head generally furnished with fleshy crests and wattles, crested or subcrested; tail of 14 feathers, more or less divaricate, and held demi-erect; upper tail coverts of males elongated and pendant.

### Gen. Gallus.—*Linn.*

Head furnished with a fleshy crest; face and wattles nude; tarsus in males spurred; other characters as in the sub-family.

**83. Gallus ferrugineus** (*Gm.*), *Jerd.*, *B. Ind.* ii. p. 236; *Elliot, Mon. Phas.* ii. pl. 32; *Hume, Nests and Eggs Ind. B.* p. 528; *id.*, *Str. F.* iii. p. 171; *Blyth, B. Burm.* p. 148; *Oates, Str. F.* v. p. 104; *Hume and Dav.*, *Str. F.* vi. p. 442; *Hume, Str. F.* viii. p. 111; *Hume and Marsh.*, *Game Birds* i. p. 217, pl.; *Bingham, Str. F.* x. p. 195; *Oates, Str. F.* x. p. 236; *id.*, *B. Br. Burm.* ii. p. 322; *Murray, Avif. Brit. Ind.* ii. p. 545, No. 1207. Tetrao ferrugineus, *Gm.*, *Syst. Nat.* i. p. 761.—The Common Jungle Fowl.

Head and neck rich golden, becoming yellow on the longer hackles which cover the back; back, lesser wing coverts, and lower plumage black; tertiaries black, the greater coverts also black with a bluish tinge; median wing coverts glistening maroon chestnut, also a band connecting them with the lower back, which is followed by a broad band of rich purplish brown; lower rump and upper tail coverts rich golden; tail black, glossed with greenish.

The *female* has the crown rufous, the shafts darker; hackles of the neck dark brown edged with yellow; upper plumage and wing coverts yellowish brown mottled with black, and the shafts yellowish; primaries and secondaries dark brown, the outer webs of the latter and both webs of the tertiaries mottled with yellowish brown; under surface of the body reddish brown with paler shaft streaks, and most of the feathers stippled with blackish. (*Oates.*) Bill dark brown, reddish towards the base; under parts dull red; irides orange red; legs and feet purpurescent.

*Length.*—25 to 28 inches; wing 8·12 to 9·5; tail 11·25 to 14·3; tarsus 3 to 3·12; bill from gape 1·19 to 1·37. Females do not exceed 18·5 in length, and have a wing of from 7·1 to 7·5.

*Hab.*—Himalayas, in the lower ranges, the Dhoons, Terais, and sub-montane districts. The whole of Assam, Oudh, Central and N.-W. Provinces, Eastern Bengal, including the Sunderbuns, Arracan, Pegu, Tenasserim; all the hilly portions of Western Bengal and Northern and Central Provinces. Southwards and eastwards, it occurs north of the Godavery, Orissa, the Tributary Mehals, Ganjam, Vizagapatam, Joonaghur, Nowagur, Jeypore. There is no description of jungle from which it is absent. In the dry, level, alluvial plains and semi-deserts of Upper India it is absent. It is very partial to bamboo jungle, broken ground and ravines with dense vegetation. It breeds from January to July, according to locality. Eggs, a pale yellowish, *café au lait* colour, 8 to 12 in number.

**84. Gallus Sonnerati,** *Tem., Pl. Col.* 232, 233; *Jerd., B. Ind.* iii. p. 539, No. 813; *Elliot, Mon. Phas.* ii. pl. 34; *Hume, Nests and Eggs Ind. B.* p. 531; *id., Str. F.* iv. pp. 5, 404; *Hume and Marsh., Game Birds* i. p. 231, pl.; *Murray, Avif. Brit. Ind.* ii. p. 546, No. 1208.—The Grey Jungle Fowl.

Head, neck and hackles blackish grey, the feathers with white shafts and two yellow spots; wing coverts with oblong spots of wood brown; ear coverts pale rufous; rest of the plumage blackish grey above and below, the feathers with albescent shafts, those of the flanks centred and tipped with wood brown; outermost primaries dusky, edged paler; rest black; upper tail coverts glossy purple; tail feathers glossy green, plainer on the lateral feathers; under tail coverts glossy black with white shafts. The *female* has the head and neck rufous brown, paler on the chin and throat; the upper surface of the body is mottled with brown; wing coverts pale shafted; beneath blackish brown, the feathers broadly centred with white; flanks, thighs, vent and under tail coverts dull brown; primaries dark brown, the secondaries mottled brown; tail blackish brown. Bill yellowish horny; comb, nude orbits and wattles red; irides orange brown; legs and feet horny yellowish or reddish yellow.

*Length.*—28 to 32 inches; wing 9·35 to 9·65; tail from vent 14 to 16; tarsus 2·85 to 3; bill from gape 1·28 to 1·3. *Females—Length*—18 to 20 inches; wing 7·8 to 8·3; tail 6 to 7; tarsus 2·2 to 2·5; bill from gape 1·02 to 1·2.

*Hab.*—Throughout the peninsula of India in suitable localities, extending northwards in the Central Provinces to Puchmurree, and on the west as far north as Mount Abu. It ascends the Neilgherries to 5,000 feet. Breeds wherever found in March and April, making a nest in woods on the ground. In the Shevaroys, according to Mr. Mahon Daly, it breeds during February and March, laying its eggs under bamboo bushes, to which it is particularly partial. Eggs, 5—7, but generally 7 to 13, dirty white or buff colour, from 1·7 to 2·05 inches in length, and from 1·35 to 1·5 inches in breadth.

### Gen. Galloperdix.—*Blyth.*

Bill somewhat lengthened; orbits nude; tail moderately long, of 14 feathers, held erect and folded as in the domestic fowl; tarsus of male with 2 or more spurs; females also spurred.

**85. Galloperdix spadiceus** (*Gmel.*), *Hardwicke, Ill. Ind. Zool.* i. pl. 42, fig. 2; *Gould, B. Asia*, pt. vi. pl. 3; *Jerd., B. Ind.* iii. p. 541, No. 814; *Hume, Nests and Eggs Ind. B.* p. 532; *id., Str. F.* iv. p. 5; *Hume and Marsh., Game Birds*, p. 248, pl.; *Murray, Avif. Brit. Ind.* ii. p. 547, No. 1209.—The Red Spur Fowl.

Forehead buffish; crown of the head and nape dusky olive brown; orbital region whity brown; chin, throat, and sides of the neck pale brown; rest of body both above and below rich bay, each feather margined paler; central feather of the tail chestnut, the rest dark brown, more or less mottled in adolescents, the mottlings obsolete in old adults; lower abdomen, vent, and under tail coverts olivaceous. In the female the crown is dusky blackish, the neck olive brown; upper plumage pale rufous brown, each feather banded with black and minutely speckled; rump and upper tail coverts the same; tail feathers with black bars and rufous mottlings; primaries, their coverts and winglet spotless dusky brown; in some specimens the primaries are margined whitish and the secondaries barred with dark yellowish, the winglets too are finely barred with black and white; chin and throat albescent; neck olive brown, tipped with black; breast and flanks bright ferruginous with narrow black fringes; belly dusky brown; under tail coverts freckled rufous brown. Bill dusky, red at base, horny towards the tip; legs and feet from coral to vermilion red. Males have from 2 to 3 spurs; females also have spurs, sometimes one on one leg only, on others one on each leg; irides orange brown.

*Length.*—14 to 15 inches; wing 6·2 to 6·5; tail 5 to 6; tarsus 1·65 to 1·75; bill from gape 1 to 1·2. Females are smaller.

*Hab.*—Southern India, on the Neilgherries, Shevaroys, Wynaad, Malabar Coast, Western Ghauts, up to Mount Abu; the Eastern parts of Central India, between Nagpur and Nerbudda and in the Vindhian range; also in the Rajmehal and Kurruckpore hills. It has been found north of the Ganges and in the Nepaul and Goruckpur Terai. Wherever it is found, Hume says, he believes it is a permanent resident. It lays from the end of February to the

middle of June, about 10 eggs, similar to that of a hen in shape and size, though this varies much, and also in colour. In the Shevaroys, Mr. Mahon Daly says, it breeds in February and March. The species is numerous about the time the *Strobilanthes Kunthianus* seeds, which is about once in seven or eight years. He adds that natives collect the eggs and set them under hens to hatch, but the young as a rule get away when nearly adult. Common spur fowl afford good sport, but good dogs are needed to be successful. In the Lower Pulneys, Mr. Daly says, they are very numerous. They are poor eating at any time, and need keeping for at least 24 hours.

**86. Galloperdix lunulatus** (*Valenc.*), *Jerd.*, *B. Ind.* iii. p. 543, No. 815; *Hume*, *Nests and Eggs Ind. B.* p. 533; *Str. F.* ii. pp. 427, 458, 532; *Hume and Marsh.*, *Game Birds* i. p. 255, pl.; *Elliot*, *Mon. Phas.* ii. pl. 34; *Murray*, *Avif. Brit. Ind.* ii. p. 548, No. 1210. (?) Francolinus nivosus, *Deless.*, *Voy. Aux. Indes.* pl. 10. Perdix Hardwickii (*Gray*), *Hardw.*, *Ill. Ind. Zool.* i. pl. 52; *Jerd.*, *Ill. Ind. Zool.* i. pl. 52; *Jerd.*, *Ind. Orn.* pl. 42 (the female).—The Painted Spur Fowl.

Crown, lores, nape, cheeks, chin and throat variegated with streaks and spots of black and white; upper breast black with triangular white or buffish white spots; back, rump, upper tail coverts and wing coverts rich chestnut, the back and wing coverts with a spot of white encircled by black on each feather, and the lower back and rump with black edges to the feathers; lower breast and abdomen ochreous buff, the feathers edged with black and with a triangular black spot; thigh coverts, flanks, and under tail coverts dull chestnut, the feathers edged with black and with a white spot on each feather; primaries earthy brown, margined with chestnut, secondaries the same; tail dark sepia brown, in adults glossed with green. The *female* has the top of the head dusky; the forehead, superciliary region and nape tinged very slightly with chestnut; moustachial streak buffish, edged with dark brown; upper and under plumage olivaceous brown, except the breast and abdomen, which are ochreous with blackish lunulated margins. Bill blackish; orbits red; irides red brown; legs horny brown; legs and feet plumbeous.

*Length.*—12·5 to 13·6; wing 5·85 to 6·2; tail 4·3 to 5; tarsus 1·5 to 1·65; bill from gape 0·8 to 0·9. Females are smaller. The males have from one to three spurs on each leg, generally two on each, often two on one and three on the other. The females also generally have at least one spur on each leg, sometimes two, rarely none at all.

*Hab.*—Southern India south of the Neilgherries, the Eastern Ghauts and the high broken country connected with these into Cuttack, the Tributary Mehals, Raipoor, Bhundara, Mirzapoor and Monghyr hills. On the other hand, at Goomsoor, in the north of the Ganjam districts, *spadiceus* only occurs. The distribution of this and *spadiceus*, Hume says, is as yet very imperfectly understood and difficult to disentangle. This species is especially partial to low

rocky hills covered with impenetrable thickets. They are found either singly or in pairs, and generally met with in the morning and evening, when they descend to the more open spaces to feed. It breeds in suitable localities in the eastern two-thirds of the Peninsula of India, south of the Neigherries, also in the Shevaroys (*Daly*), during March, April, and May, making only a slight excavation in the ground for the eggs under the shelter of a boulder or rock in a thicket. The eggs are rather regular ovals, whitish buff in colour, and somewhat more elongated than the typical fowl's egg.

**87. Galloperdix zeylonensis,** *Gmel., Edit. Linn. Syst. Nat.* tom. I. part ii. p. 759; *Gould, B. Asia*, pt. vi. pl. 67; *Blyth, Cat. B. Mus. As. Soc. Calc.* p. 241; *Murray, Avif. Brit. Ind.* ii. p. 548. Perdix bicalcaratus, *Forst., Ind. Zool.* p. 25, pl. 14; *Penn., Ind. Zool.* p. 40, pl. 7. Perdix Zeylonensis, *Bonn. et Vieill., Ency. Moth. Orn.* i. p. 210. pl. 93, fig. 3. Francolinus Ceylonensis, *Less. Traite d'Orn.* p. 504. Galloperdix bicalcaratus, *Hume, Str. F.* vii. pp. 430, 453; *Hume and Marsh., Game B.* pl.—The CEYLON SPUR FOWL.

*Male.*—Head black, each feather with a white mesial streak, becoming indistinct on the centre of the crown; back of neck black, with a white mesial streak to the feathers; shoulders and scapulars deep chestnut, with a mesial black dash, inside of which is a white line; lower back deep chestnut, freckled with black near the tips; upper and under tail coverts black; lesser wing coverts black, bordered with chestnut at base, and with a small buffy spot at tip; tail purplish black; feathers of the lower surface black, with a pear-shaped white mark near the tips, becoming lengthened on the abdomen and flanks; bill and orbits red, also the feet; irides dark brown.

The female is deep chestnut throughout, paler on the under surface and minutely freckled with brown, especially on the secondaries and upper tail coverts; tail purplish black; bill, orbits and legs red.

*Length.*—14 to 16 inches; wing, 6 to 6·2; tarsus 1·5 to 1·65; bill 0·8 to 0·9.

*Hab.*—Ceylon, to which Island it is peculiar. Breeds during the S.-W. Monsoon in the Southern Provinces. The nest, according to Major Legge, is situated in forest or thick jungle, under the shelter of a rock, or near the projecting root of a large tree. It is a hollow scraped in the ground, lined with a few leaves. Eggs, 3—5 in number, oval, of an uniform cream colour with, in some, white calcareous specklings. In length they vary from 1·42 to 1·43 inch and in breadth 1·12.

## Family.—TETRAONIDÆ.

Bill generally short, stout and thick; wings rounded in most, pointed in a few, longer comparatively than in the *Phasianidæ*; tail short; tarsus short and stout.

## Sub-Family.—PERDICINÆ.

Tarsus not feathered; orbital region not feathered in some; tarsus often spurred. This includes the Snow Cocks and Partridges, also the Rock or Sand Partridges.

### Gen. Tetraogallus,—*Gray.*

Bill moderately long, broad and stout; a small nude patch behind the eye; tail of 18 feathers; tarsi short and stout, and with a blunt spur.

**88. Tetraogallus Himalayensis** (*G. R. Gray*), *Gould, B. Asia*, pt. v. pl. 2; *Jerd., B. Ind.* iii. p. 549, No. 816; *Hume, Game Birds of Ind.* p. 267, pl.; *Murray, Avif. Brit. Ind.* ii. p. 549, No. 1211.—The Himalayan Snow Cock.

Crown of the head, cheeks and back of neck grey; a chestnut band from above the eye down the sides of the nape, and a second one from the angle of the mouth down the sides of the neck; two dark brown lunate marks on the sides of the neck; chin and throat whitish; ear coverts greyish; breast whitish, the upper feathers each with a black lunule; upper surface of the body light ashy grey, minutely freckled with black, more ashy on the wings and fringed with rufous; feathers of the back, rump and wing coverts striped with rufescent buff; primaries white, broadly tipped with dusky and freckled with greyish; under surface of the body grey, minutely freckled with brown, with a double broad streak of chestnut on each feather; vent and under tail coverts white. Bill pale horny or slaty; nostril dark horny; irides dark brown; legs and feet yellowish red or orange.

*Length.*—26 to 29 inches; wing 11·25 to 12·6; tail 7·8 to 8·1; tarsus 2·7 to 2·8; bill from gape 1·35 to 1·55. Females are smaller. *Length*—21·5 to 23 inches, with a wing of 10·8 to 11·5.

*Hab.*—The Himalayas from the eastern portions of Kumaon to Hazara. Affects bare rocky hillsides, ravines and passes in the higher snowy ranges. Common also in the northern portions of Kumaon and British Garhwal.

**89. Tetraogallus thibetanus**, *Gould, B. Asia* part v. pl. 4; *Jerd., B. Ind.* iii. p. 554; *Hume, Str. F.* vii. p. 430; *id. and Marsh., Game Birds*, p. 276, pl.; *Murray, Avif. Brit. Ind.* ii. p. 549, No. 1212.—The Thibetan Snow Cock.

Head and neck grey; ear coverts white; upper plumage freckled with buff grey and black, the latter colour forming dashes; primaries grey; secondaries broadly edged externally with white, forming a marked wing band; tail rufous brown; chin, throat and breast white, separated from the grey of the head and neck by a dusky freckled line and a gorget of freckled grey and buff; abdomen white; flanks and lower belly with dashes of black; under tail coverts black; bill horny; legs red. (*Jerd.*)

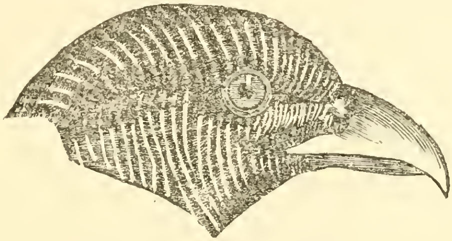
*Length.*—22 inches; wing 10·5; tail 7; tarsus 2·5. (*Jerd.*)

*Hab*—Kumaon, in the Himalayas, Ladak, and other places across the Himalayas.

Gen. **Lerwa.**—*Hodgs.*

Bill short and stout; orbits feathered; wings moderately long and pointed, 2nd quill longest; tail of 14 feathers; tarsi partly feathered and with short spurs in the male.

**90. Lerwa nivicola** (*Hodgs.*), *Jerd.*, *Madras*, *Journ Lit.* 1837; *Jerd.*, *B. Ind.* iii. p. 555, No. 817; *Hume and Marsh.*, *Game Birds* vol. ii. p. 1, pl. Perdix lerwa, *Hodgs.*, *P. Z. S.* 1833; *Hardw.*, *Ill. Ind. Zool.* 2, pl. 44, fig. 1; *Gould, B. Asia*, pt. vii. pl. 8; *Murray*, *Avif. Brit. Ind.* ii. p. 550, No. 1213.—The SNOW PARTRIDGE.



Head of Lerwa nivicola.

Head, neck and whole upper plumage, including the wings and tail, minutely barred with black and greyish white; the sides of the neck tinged with chestnut, also the wing coverts; quills dusky brown, narrowly freckled with buffy white on their outer edges, and the secondaries broadly tipped with white; tail dusky, with freckled bars of grey and rufous, the feathers black-shafted; chin greyish; throat, breast and upper abdomen chestnut red with dashes of buff especially on the flanks; lower abdomen, vent, and thigh coverts like the back, but with a rufous tinge; lower tail coverts chestnut red, with buffy white tips. Bill bright red; irides dark brown; legs and feet red.

*Length.*—15 to 16 inches; wing 8; tail 4; tarsus 1·5.

*Hab.*—The whole extent of the Himalayas to the extreme N.-W. in Sikkim. According to Jerdon they are gregarious in coveys, nestle and breed under jutting rocks, feed on seeds and insects.

Gen, **Francolinus.**—*Steph.*

Bill very slightly curved at tip; tail of fourteen feathers, even or rounded; tarsi of male with blunt spurs.

**91. Francolinus vulgaris** (*Steph.*), *Gould*, *B. Eur.* pl. 259; *Jerd.*, *B. Ind.* iii. p. 558, No. 818; *Hume*, *Nests and Eggs Ind. B.* p. 537; *id.*, *Str. F.* iv. p. 5; *id. and Marsh.*, *Game Birds* ii. p. 9, pl.; *Murray*, *Hbdk.*, *Zool.*, *&c.*, *Sind*, p. 202; *id.*, *Vert. Zool.*, *Sind*, p. 213; *id.*, *Avif. Brit. Ind.* ii. p. 550, No. 1214.—The BLACK PARTRIDGE.

PLATE.

*Male.*—Top of head black, the feathers behind edged with rufescent brown; lores, chin, throat and neck in front black; nape and hind neck black, each feather with four white spots, two on each side of the shaft, the lower of which near the tip showing through; a streak under the eye to the ear coverts white; a chestnut red collar round the neck; upper part of the back black, also the scapulars, the smaller feathers with four roundish spots, two on each side of the shaft, and the longer ones with six rufescent marks, two transverse and a longitudinal streak on each side of the shaft, the longitudinal ones only showing from under the feathers; middle and lower back, rump and upper tail coverts barred with black and white; wing coverts black, edged with rufescent; quills barred with rufous and black; tail black, the middle feathers barred like the back with black and white, the rest barred at the bases only; breast, abdomen and flanks deep black, the feathers of the flanks with 3—4 white spots, the hinder ones near the vent with broad white tips; thigh and under tail coverts and feathers round the vent chestnut; bill black; irides brown; legs reddish.

*Length.*—13 to 14 inches; wing 5·5 to 5·75; tail 3·5.

The *female* wants the black head and neck of the male and the rufous collar. It is generally much browner in colour.

*Hab.*—The whole of Northern India from the Himalayas to the valley of the Ganges; also the Punjab. Southwards, through Rajpootana to Sind. Eastwards, through Dacca to Assam, Sylhet and Tipperah. Breeds in suitable localities, wherever it occurs, during July and August, laying from six to ten eggs, unspotted fawn brown in colour, varying in size from 1·42 to 1·8 in length and 1·22 to 1·38 in breadth. It frequents, by preference, grass meadows near water; also cultivated fields of corn, mustard or pulse, and any patch of moderately high green herbage. In Sind it affects low tamarisk jungle and wheat fields. Its call in the early mornings is unmistakable, and is always made from some little eminence, as an ant hill or the stump of a tree. It affords good sport with a pointer, and is tolerably good eating, but, like all the *Tetraonidæ*, is best cold, and after at least 36 hours.

**92. Francolinus pictus** (*Jard. and Selby*), *Jerd.*, *B. Ind.* iii. p. 561, No. 819; *Hume*, *Str. F.* v. p. 211; *id.*, *Nests and Eggs Ind. B.* p. 538; *id. and Marsh.*, *Game Birds* p. 19 pl.; *Murray*, *Avif. Brit. Ind.* ii. p. 551, No. 1215. Perdix pictus, *Jard. and Selby*, *Ill. Orn.* pl. 50.—The Painted Partridge.

Crown of the head dark brown, the feathers edged paler; forehead and lores, also the cheeks and ear coverts, chestnut; back and scapulars deep brown, the feathers margined with white; wings chestnut, banded with black; lower back, rump, and upper tail coverts with wavy bars of black and white; tail deep brown, the feathers narrowly barred across; chin white; neck all round pale ferruginous; breast and abdomen variegated black and white, each

feather being white with two dark bands, and the shafts and tip black; under tail coverts chestnut. Bill blackish; irides dark brown; legs yellowish red.

*Length.*—12 inches; wing 6; tail 2·75; tarsus 1·75.

*Hab.*—Central and Southern India, where it replaces *F. vulgaris.* Found throughout Bundelkund and the Saugor and Nerbudda territories, thence south to Nagpore and the Deccan; west it extends into Khandesh and perhaps Guzerat, and eastwards to the Northern Circars. Like its northern congener, Jerdon adds that it delights in grassy plains and fields, but affects more the open, dry and raised plains with scattered bushes. It breeds during the monsoon (July to September), laying 7—8 eggs, rather of a peg-top shape, broad and obtuse at the large end, and much pointed towards the small end; the colour may be said to be a pale *café au lait.* Size 1·3 to 1·45 by 1·1 to 1·22.

**93. Francolinus chinensis** (*Osb.*), *Hume, Nests and Eggs Ind. B.* p. 539; *id., Str. F.* iii. p. 171; *Wardlaw-Ramsay, Ibis,* 1877, p. 468; *Oates, Str. F.* v. p. 164; *Dav. et Oust. Ois. Chine,* p. 400; *Hume and Dav., Str. F.* vi. p. 443; *Hume, Str. F.* viii. p. 111; *Hume and Marsh., Game Birds* ii. p. 27, pl.; *Oates, Str. F.* x. p. 236; *id., B. Br. Burm.* ii. p. 323. Tetrao chinensis, *Osb., Voy.* ii. p. 326. Tetrao perlatus, *Gm., Syst. Nat.* i. p. 758. Francolinus Phayrei, *Blyth, J. A. S. B.* xii. p. 1011; xxiv. p. 480; *id., B. Burm.* p. 149. Francolinus perlatus, *Anders., Yunnan Exped.* p. 672.—The CHINESE FRANCOLIN.

Crown of the head black, each feather edged with chestnut; a band from the bill over the eyes and ear coverts black; space between this and the crown chestnut, a dark band from the bill on each side down the sides of the throat; space between these and the superciliary streak white; chin and throat white. Neck, back, breast, abdomen and sides of the body black, ocellated with fulvous white; under tail coverts chestnut; rump and upper tail coverts barred black and white; scapulars and tertiaries chestnut; coverts and wings blackish, ocellated and barred with white; tail black, barred with white, except at the tip.

The *female* has the whole lower plumage barred with black; the chin white, and wants the superciliary and coronal band, and there are no ocellations on the wings; irides hazel; bill dusky, paler at tip of upper mandible; legs orange.

*Length.*—13 inches; tail 3·3; wing 5·7; tarsus 1·7; bill from gape 1.

*Hab.*—British Burmah, confined to the upper portion of the Irrawaddy valley above Prome. Habits same as its other congeners. Breeds in June and July. Eggs 8 in number, pale buff. Size—1·45 to 1·51 by 1·2.

## Gen. Caccabis.—*Kaup.*

Bill red, slightly longer than in *Francolinus;* tarsi of male with a blunt spur; a small bare patch behind the eye.

**94. Caccabis chukor,** *Gray, Ill. Ind. Zool.* pl. 54; *Jerd., B. Ind.* iii. p. 564, No. 820; *Hume, Nests and Eggs, Ind. B.* p. 139; *Murray, Hdbk., Zool., &c., Sind,* p. 203; *id., Vert. Zool., Sind,* p. 213; *Hume and Marsh., Game Birds* ii. p. 33, pl.; *Murray, Avif. Brit. Ind.* ii. p. 553, No. 1217.—The CHUKOR PARTRIDGE.

Above pale bluish or olive ashy, with a rufescent tinge on the back; sides of the face, chin and throat fulvous, pale chestnut or rufescent, encircled by a broad black band from the forehead through the eye along the side of the neck on to the breast, meeting its fellow from the other side and forming a large pale chestnut or rufous pectoral gorget; a pale white line behind the eye; ear coverts chestnut; sides of the lower mandible and chin with a black spot; breast bluish ashy, slightly tinged with rufescent; abdomen and under tail coverts buff, the flanks from the axil deeper buff, each feather ashy at the base with two dark bands, the interspace of which is buff and terminated broadly with chestnut; wings concolorous with the back, the ends of all the primaries, except the first, margined to nearly the tip on their outer webs with buff, some of the secondaries also; axillaries buff. Tail rufous, except the central feathers, which are concolorous with the back.

*Length.*—14 to 15·75 inches; expanse 21 to 23·25; wing 6·25 to 6·8; tail 4 to 4·8. The female is slightly smaller. *Length*—13 to 14·25; resembles the male, and wants the spur.

*Hab.*—Throughout the Himalayas to Afghanistan. Common also in Beloochistan, Sind, Punjab Salt Range, Persia and along the Arabian Coast. Breeds from May to July in Chaman (S. Afghanistan), making a nest composed of a little grass under the shelter of grass tufts or bushes. The normal number of eggs is 12, but as many as 14 and 16 have been taken from a single nest, all varying in size and shape, from peg-tops to elongated ovals. The colour is also variable, but typically is a pale *café au lait* ground colour, with brick-red specklings. The Chukor Partridge is very pugnacious, especially during spring time, when two fighting cocks may be almost knocked over with a stick. They are much prized for their fighting propensities, and in Beloochistan and Afghanistan the men have a number trained for the purpose, on which large bettings are made. Wherever Chukor are found, September and October are certainly the best months for shooting them. The young of the year are then fatter than the old ones, much more tender, and better eating, though the old ones are not to be despised when "hung up till gamey." Chukor eggs and those of the Common Grey make excellent *omelette*; hard boiled, they curry well.

### Gen. **Ammoperdix.**—*Gray.*

Bill reddish; wings long; tarsi not spurred.

**95. Ammoperdix bonhami,** *Gray, Des. Murs. I. O.* t. 29; *Gould, B. As.* pt. ii. pl. 4; *Jerd., B. Ind.* iii. p. 567; *Hume, Str. F.* i. 226

*Murray, Hdbk., Zool., &c., Sind*, p. 203; *Hume, Nests and Eggs Ind. B.* p. 540; *Hume and Marsh., Game Birds* p. 45 pl.; *Murray, Avif. Brit. Ind.* ii. p. 553, No. 1218.—The Seesee Partridge.

*Male.*—Head and cheeks dull grey; forehead, a streak above and below the eye and a border to the ear coverts black; lores, a band behind the eye and ear coverts silky white, rufous behind; throat greyish white; breast vinaceous or vinous fawn; sides of the neck spotted with white; upper parts isabelline or pale brownish, freckled with dusky; rump and upper tail coverts like the back, with darker markings; primaries isabelline on their outer webs, finely pencilled with dusky, and all, except the first, with broad whitish bands or bars; tail brownish, tinged with chestnut, the tips of the feathers freckled with dark brown; legs and feet dingy yellow; irides bright or orange yellow; bill orange; cere orange red.

*Length.*—9 to 11 inches; wing 4·75 to 5·75; tail 2·5. *Female* slightly smaller, has not the dull grey crown of the male, and in general is more brownish throughout; the black markings on the head are replaced by freckles of dusky or black and white, and the entire upper and lower surface of the body is mottled.

*Hab.*—Sind, Punjab, N.-W. Provinces, Beloochistan and Afghanistan, also Persia. Numerous throughout Upper Sind, also in Beloochistan, where in the early morning, especially on broken ground and on the road in the Bolan, as many as two or three hundred may be met with, feeding on the droppings of cattle, or, in its absence, on grass seeds along the hill sides. Breeds in the Punjab, Beloochistan and Afghanistan in April and May, nesting in a slight depression in the ground under some thick bush or jutting rock. Eggs 10—12 in number, rather lengthened ovals, more or less compressed or pointed towards one end; in colour from pure white to a pale *café au lait*. They vary in size from 1·3 to 1·5 inches in length × 0·98 to 1·1 in breadth. It is very fair eating, and superior to the Chukor, though not equal to the Francolin.

## Gen. Ortygornis.—*Reich.*

**96. Ortygornis ponticeriana**, *Gmel., Syst. Nat.* i. p.; *Gray, Ill. Ind. Zool.*, pl. 56, fig. 2; *Jerd., B. Ind.* iii. p. 569, No. 822; *Murray, Hbdk., Zool., &c., Sind*, p. 203; *id., Vert. Zool., Sind*, p. 214; *Hume, Nests and Eggs, Ind. B.* p. 542; *Hume and Marsh., Game Birds* p. 51, pl.; *Murray, Avif. Brit. Ind.* ii. p. 553, No. 1219.—The Common Grey Partridge.

Forehead, over the eyes, lores, nape and face rufous, the face with dusky freckles; top of the head olive brown; ear coverts rufescent brown; back, scapulars and wing coverts dark chestnut, each feather with two or three transverse buffy bars, bordered with black on both sides; feathers of the rump

and upper tail coverts similar, but olive brown instead of chestnut; tail feathers rich chestnut or deep ferruginous, with a broad subterminal dark brown nearly black band, tipped with pale or yellowish white; central tail feathers like the back; beneath the chin and throat are white or creamy, encircled from the base of the lower mandible with dark spots, forming a gular patch; breast and entire lower parts creamy white, or very pale buff, the feathers with transverse dark bars; lower tail coverts ferruginous. The female is like the male, but paler in colour, and wants the spur.

*Length.*—11·5 to 13·5 inches; wing 5·5 to 6; tail 3·35 to 4; legs bright red; irides brown; the orbital ring with a row of minute white feathers; bill dusky brown.

*Hab.*—Throughout India, Ceylon, Beloochistan and S. Persia. Affects dry, scrubby or bare stony tracts. Delights among *Euphorbia* bushes. In the morning they are generally found in fields or on the edges of cultivation, where they pick up seeds and corn, also insects of all kinds. They afford fair sport with one or two good men, or a good dog and one's wits against the birds. Breeds from February to May, and from July to November. In Bengal, either in the deltaic district or in the Eastern Provinces, it does not occur, nor in Assam or Burmah. In the Deccan it ascends to 2.500 feet or more; in the Himalayas and Southern India not above 1,000 feet. Both birds and their eggs are capital eating, especially birds of the year.

**97. Ortygornis gularis** (*Temm.*), *Jerd.*, *B. Ind.* iii. p. 572, No. 823; *Hume, Nests and Eggs Ind. B.* p. 544; *id. and Marsh.*, *Game, Birds* p. 59, pl. Perdix gularis, *Hardw.*, *Ill. Ind. Zool.* i. pl. 56, fig. 1; *Murray, Avif. Brit. Ind.* ii. p. 554, No. 1220.—The KYAH PARTRIDGE.

Crown olive brown; lores, a streak below the eye and supercilium pale buff; a line through the eye to the ear coverts dusky brown; back brown, barred with buff; wing coverts the same; primaries brown on the outer web, ferruginous on the inner; tail ferruginous, central feathers brown; chin and throat rusty ferruginous; breast and abdomen brown with broad white streaks edged with black; under tail coverts ferruginous; under wing coverts ferruginous. Bill blackish; irides dark brown; legs litharge or dull red.

*Length.*—15 to 15·5 inches; wing 7·1 to 7·25; tail 4·5; tarsus 2·5; bill from gape 1·01.

*Hab*—Bengal from Tirhoot and Goruckpoor to the Sunderbuns, extending eastwards into Assam, Sylhet, Cachar, and Tipperah. In the Western Provinces of Bengal, it is found on the north bank of the Ganges, crossing in a few suitable localities from Monghyr to Rajmahal. It is also found up to the base of the Himalayas and in the Oudh Terai. Jerdon adds that its favourite grounds are thick beds of reeds and long grass, along the banks of rivers, jheels and water-courses, and especially in those swampy patches of

reeds where the creeping rose bushes form thickets impenetrable to aught but an elephant. It is said to breed from March to May. The eggs, 5 in number, are, it is said, laid under some thick bush in a dry spot, and to be white, like those of the Grey Partridge. Hume, quoting Tickell, says that for the table the "Kyah" is not in much repute. The young, like the young of the Grey Partridge, are tolerably good, but old ones are dry and hard. A writer however in the *Bengal Sporting Magazine*, quoted by Jerdon, eulogises the bird as "bearing the palm for delicacy of flavour and texture in the meat of all the game birds of India." During the months of November and December, the writer says it forms an unrivalled dish for the epicure in gamey flavour, and an additional inducement to sportsmen to fag and find. Hume says he suspects that the bagging and finding are very necessary ingredients to furnish that renowned sauce of Spartan origin, without which the "Kyah" would be little esteemed. Personally I know nothing of the bird and cannot offer an opinion.

*Perdix Hodgsoniæ, Gould*, figured by Gould in his "Birds of Asia," pt. ix., pl. 2, does not appear to have been yet obtained within our limits. The upper plumage is olive brown, and the lower parts buff; sides and back of the neck and wings chestnut red; head red, speckled with white; line from the forehead round the ear coverts and throat black. (*Jerd.*)

## Gen. **Arboricola**.—*Hodgs.*

Tarsus not spurred; toes long with long claws; tail short, of 12 feathers. Sexes similar in plumage; flesh dry and tasteless.

**98. Arboricola torqueola** (*Valenc.*), *Jerd.*, *B. Ind.* iii. p. 577, No. 824; *Hume, Str. F.* ii. p. 449; *id.*, *Nests and Eggs Ind. B.* p. 544; *id. and Marsh.*, *Game Birds* ii. p. 65, pl. Perdix megapodiæ, *Tem.*, *Pl. Col.* 462, 463. Perdix olivacea, *Gray and Hardw.*, *Ill. Ind. Zool.* i. p. 57; *Murray*, *Avif. Brit. Ind.* ii. p. 555, No. 1221.—The Common Hill Partridge.

Top of the head uniform bright chestnut; lores black, also above and below the eye; ear coverts chestnut, continued as a streak down the sides of the nape; back and rump olive, the feathers edged with dusky and forming lunules; wing coverts pale chestnut with blackish shaft-streaks and spots; chin and throat black, the feathers margined with white; *breast pale ashy, surmounted by a broad white band;* lower breast and abdomen ashy white; flanks olive, broadly dashed with chestnut and with large white spots; tail olive, speckled with black. The female has the head and neck olive, speckled with black; the lores white with the same but distant speckles; middle of throat unspotted rufous; breast grey, tinged with rusty. Bill black; irides brown, deep brown or reddish brown; orbital skin and a spot at gape crimson; legs and feet blue grey, tinged with red.

*Length*.—10·5 to 12 inches; wing 5·7 to 6·2; tail 2·75 to 3·25; tarsus 1·6 to 2; bill from gape 0·8 to 1.

*Hab*.—Throughout the outer ranges of the Himalayas from Simla to Darjeeling. In Sikkim it is found from about 6,000 to 9,000 feet. It extends to Bhootan and also to the Naga hills. Hume says it haunts dark, densely jungled watercourses and ravines running down the hillsides and never or seldom rising when disturbed. Nothing appears to be known of the nidification of this species.

**99. Arboricola atrogularis** (*Blyth*), *Jerd.*, *B. Ind.* iii. p. 579; *Hume*, *Str. F.* ii. p. 449; v. p. 14 (note); *Hume and Marsh.*, *Game Birds*, p. 79, pl.; *Murray*, *Avif. Brit. Ind.* ii. p. 556, No. 1222.—The BLACK-THROATED HILL PARTRIDGE.

Not unlike *A. torqueolus*, but differs in having the top of the head greyish olive, more or less black spotted, and the breast pale uniform grey. Bill blackish brown; irides deep brown; orbital space and gular skin vermilion; legs orange red.

*Length*.—10 to 11 inches; wing 5 to 5·9; tail 2·15 to 2·5; tarsus 1·5 to 1·7; bill from gape 0·85 to 0·87.

*Hab*.—Assam, extending to the Garo hills, thence it occurs in Cachar, Sylhet and Tipperah; also in Chittagong. Breeds in Sylhet, where Mr. Cripps took two nests. The eggs were broad ovals, a good deal pointed towards the small end, and white. In size they vary from 1·33 to 1·43 in length and from 1·1 to 1·13 in breadth. All the Arboricolas are good for the table.

**100. Arboricola brunneipectus** (*Tickell*), *Blyth*, *J. A. S. B.* xxiv. p. 276; *Blyth*, *B. Burm.* p. 150; *Hume and Dav.*, *Str. F.* vi. p. 443; *Hume*, *Str. F.* viii. p. 111; *Hume and Marsh.*, *Game Birds* ii. p. 87 pl.; *Bingham*, *Str. F.* ix. p. 195; *Oates*, *Str. F.* x. p. 236; *Oates*, *B. Br. Burm.* ii. p. 325; *Murray*, *Avif. Brit. Ind.* ii. p. 556, No. 1223. Arborophila brunneipectus, *Hume*, *Str. F.* ii. p. 449; iii. p. 174; *Wald.*, *Ibis*, 1875, p. 459.—The BROWN-BREASTED HILL PARTRIDGE.

Forehead and supercilium, which extends to the nape, fawn colour; lores, circle round the eye, a line continued from behind the eye over the ear coverts to the sides of the neck black, forming in the latter a large black patch, behind which and around the throat and upper breast are spots of black; crown and nape olive brown, the feathers tipped with black; hind head nearly all black; back and scapulars olive brown, barred straight or lunately with black; rump olive brown with but few bars; upper tail coverts plain olive brown; tail olive brown, mottled with black; primaries brown, their tips mottled with rufescent; secondaries brown, edged on the outer webs with pale chestnut; tertiaries and longer scapulars olive brown, tipped with chestnut and a subterminal black oval patch; wing coverts olive brown, some of the

median and greater series with large black patches; breast uniform tawny or ferruginous olive; middle of abdomen and vent whitish; sides of abdomen and body tawny, the feathers with a large white spot and edged in crescent form with black; under tail coverts tawny brown barred with black. Bill black; eyelids, orbital patch, and gular skin bright red, very thinly covered with feathers; legs and feet dull coral to bright red.

*Length.*—10·6 to 11·6; wing 5·2 to 6; tail 2·1 to 2·6; tarsus 1·5 to 1·8; bill from gape 1·0 to 1·1. Females are smaller and average only 10 inches in length.

*Hab.*—The Pegu hills on the eastern spurs and Tenasserim, as far south as Tavoy. Oates adds that it is common in densely-wooded ravines and nullahs. They skulk in the undergrowths, and would seldom be seen were they not to come to the beds of streams to drink and bathe.

**101. Arboricola chloropus** (*Tickell*), *Blyth, J. A. S. B.* xviii. p. 453; *Blyth, B. Burmah,* p. 150; *Hume and Dav., Str. F.* vi. p. 444; *Hume, Str. F.* viii. p. 111; *Hume and Marsh., Game Birds* ii. p. 91, pl.; *Bingham, Str. F.* ix. p. 195; *Oates, Str. F.* x. p. 236; *id., B. Br. Burmah* ii. p. 326; *Murray, Avif. Brit. Ind.* ii. p. 557, No. 1224. Tropicoperdix chloropus (*Tickell*), *Blyth, J. A. S. B.* xxviii. p. 415. Arborophila chloropus, *Hume, Str. F.* ii. p. 449. Peloperdix chloropus, *Hume, Str. F.* iii. p. 176.—The Green-legged Hill-Partridge.

Forehead and supercilium continued on to the sides of the nape and meeting behind white, the feathers slightly edged with blackish; crown and nape rich olive brown; the back, scapulars, tertiaries, lesser wing coverts, rump, and upper tail coverts rich olive brown tinged with fulvous and irregularly but closely barred with blackish; primaries dark brown, freckled on the outer webs with fulvous; greater coverts and secondaries freckled and marked with fulvous and pale rufous; tail rufous brown, with freckles and broken bars of black; upper abdomen ferruginous; lower abdomen, vent and under tail coverts buffy white; sides of the body pale ferruginous with wavy bars of black. Irides hazel; bill dusky red at base, rest greenish; eyelids and orbital skin purplish; legs greenish.

*Length.*—11·4 to 12 inches; wing 6·05 to 6·6; tail 2·9 to 3·5; tarsus 1·7 to 1·79; bill from gape 0·8 to 9. The females are smaller.

*Hab.*—The evergreen forests of the eastern slopes of the Pegu hills; also in Tenasserim from the extreme north down to Tavoy. Habits same as the last.

**102. Arboricola intermedia,** *Blyth, J. A. S. B.* xxiv. p. 277; *Hume, Str. F.* viii. p. 111.; *Hume and Marsh., Game Birds* ii. p. 85, pl.; *Murray, Avif. Brit. Ind.* ii. p. 557, No. 1225. Arborophila intermedia, *Hume, Str. F.* ii. p. 450; *Oates, Str. F.* iii. p. 344; *id., B. Br. Burmah* ii. p. 327.—The Arracan Hill-Partridge.

Front of the head as far back as the eyes pale grey; rest of head and nape hair brown, streaked with black; lores, and a broad supercilium reaching to the back of the head greyish white, the feathers with a central black streak; ear coverts, cheeks, sides of the neck and feathers under the eye black, the bases rufous and showing through; back, rump, and upper tail coverts glossy olive brown, edged darker, and all the feathers except those on the back with a small lanceolate spot of black; tail olive brown, mottled with black, the outer feathers tipped with white; primaries brown, narrowly edged and tipped with pale buff; secondaries with broader edges and tips; tertiaries, scapulars and wing coverts a mixture of chestnut, fulvous and black, the latter colour being in the form of large oval spots near the tips; throat and foreneck black, a rufous patch below it; breast and upper abdomen dark grey; sides of the body chestnut, each feather with a large grey patch, inside of which is a long and narrow white streak; lower abdomen greyish white; flanks and thigh coverts pale buff with large black spots; under tail coverts black at base, white at tip.

*Length.*—10 to 11 inches; wing 5·15 to 5·7; tail 2·2 to 2·4; tarsus 1·5; bill from gape 0·8 to 0·9.

*Hab.*—Arracan hills; also Cachar and the Naga hills.

**103. Arboricola rufogularis,** *Blyth, J. A. S. B.* xviii. p. 819; *Jerd., B. Ind.* ii. p. 578; *Blyth, B. Burm.* p. 150; *Hume, Str. F.* v. p. 114; *Hume and Dav., Str. F.* vi. p. 444; *Hume, Str. F.* viii. p. 111; *Hume and Marsh., Game Birds* ii. p. 75, pl.; *Scully, Str. F.* viii. p. 349; *Oates, B. Br. Burm.* ii. p. 328; *Murray, Avif. Brit. Ind.* ii. p. 558, No. 1226. Arborophila rufogularis, *Hume, Str. F.* ii. p. 450. Arboricola tickelli, *Hume in Hume and Marsh. Game Birds* ii. p. 78, note.—The RED-THROATED HILL-PARTRIDGE.

Very similar to *A. intermedia*, but differs in the throat, foreneck and sides of the neck being rufous, spotted with black, instead of black, and the rufous of the foreneck divided from the grey breast by a black band. (*Oates.*) Legs and feet pale pinky red; bill horny black; irides deep brown; orbital skin bright red. (*Davison.*)

*Length.*—11 inches; tail 3; wing 5·5; tarsus 1·5; bill from gape 1·1.

*Hab.*—Tenasserim, and along the Himalayas from Assam to Kumaon. Habits the same as the other species of the genus.

**104. Arboricola Mandelli,** *Hume, Str. F.* ii. p. 449; iii. p. 262, pl. 1; *Hume and Marsh., Game Birds* ii. p. 84, pl.; *Murray, Avif. Brit. Ind.* ii. p. 558, No. 1227.—The BHOOTAN HILL PARTRIDGE.

Lores, forehead, and sinciput a rich deep brownish chestnut; under the anterior portion of the lores a narrow yellowish streak; crown, occiput and nape rich deep rufescent olive brown; supercilum grey, continued back over

the ear coverts to the nape ; chin, throat, cheeks, ear coverts, sides of the neck and basal portion of the back of the neck rich bright ferruginous, spotted everywhere except on the chin and throat with velvetty black, a band of which clearly defines the ferruginous across the base of the throat. Immediately above this black band, in the centre of the base of the neck in front, is a conspicuous pure white patch, about 0·8 inch long and 0·35 to 0·4 deep. Below the black band, the breast and sides of the breast are rich slightly ferruginous maroon; on either side of the upper portion of the throat a very narrow mandibular white stripe, about 0·6 inch long, runs down from the base of the lower mandible; above this a black line, beginning under the posterior portion of the lores, runs under the eye; the abdomen and rest of the lower parts pale slaty grey, rather sullied, and in some lights slightly brownish, and many of the feathers with a small irregular central white spot near the tip. The flank feathers (where the white spots are largest and most conspicuous) tinged or margined with rusty or ferruginous chestnut; the vent and lower tail coverts strongly tinged with dull olive, the coverts, moreover, having the white spot nearer the tips more or less expanded into a bar, and here and there a little tinged with rusty; wing lining about the carpal joint a rich hair brown; the rest a pale grey brown (much the colour of the lower surface of the quills), a little tipped with white. Upper back and inter-scapulary region plain olive, a little slaty in some lights towards the bases of the feathers, some of the feathers very narrowly and inconspicuously fringed with black; lower back, rump and upper tail coverts rather browner and brighter olive, some of the feathers very narrowly fringed with black and most of them with conspicuous hastate subterminal velvet black spots; coverts and scapulars and tips of tertiaries similar (the black spots varying in shape from a sort of lunule on the scapulars to the linear lanceolate dash on some of the coverts), but the feathers more or less tinged towards the margins with deep ferruginous; the primaries plain, uniform hair brown; secondaries similar, but freckled and mottled more or less on the outer webs and at the tips with ferruginous. (*Hume, Game Birds.*) The soft parts are not described.

*Length.*—8·5 inches; wing 5; tarsus 1·5; bill from gape 0·9; bill at front 0·65; tail 1·5.

*Hab.*—The Bhootan Doars. Nothing is known of its habits, though it may be presumed that they do not differ materially from those of its congeners.

## Gen. **Bambusicola.**

General characters as in Arboricola; wings short and rounded; male tarsi spurred.

**105. Bambusicola Fytchii,** *Anderson, Yunnan Exped.*; *Hume, Str. F* iii. p. 399; *id.*, v. p. 493; *Hume and Marsh., Game Birds* ii. p. 97; *Murray, Avif. Brit. Ind.* ii. p. 559, No. 1228.—The WESTERN BAMBOO PARTRIDGE.

Top of head, hind neck, lower back, rump and upper tail coverts dull pale olivaceous brown, more or less barred with very fine zigzag lines of a paler colour; some of the upper tail coverts mesially with a black spot; tail rufous brown, banded transversely with freckly bars of black and rufescent buff; wing coverts, tertiaries, and longer scapulars with chestnut and black spots at the tips; sides and flanks ochraceous, with a large velvet black subterminal spot; chin pale ochraceous; lores, a streak above the black streak behind the eye, sides of the face and cheeks chraceous; breast tinged with chestnut; primaries chestnut on the outer webs; bill dark brown; irides hazel brown; legs pale greenish grey.

*Length.*—14 to 14·3 inches; wing 6·1 to 6·45; tail from vent 4·62 to 5·13; tarsus 1·75 to 1·93; bill from gape 0·9 to 0 97. Females average smaller.

*Length.*—12·5 to 13 inches, with a wing of 5·6 to 5·8.

*Hab.*—Shillong, in the Khasia hills, also in the Garo, North Cachar and Naga hills, and probably the hill ranges of Upper Burmah and Assam. It is said to be a shy bird, and to frequent dense grass.

## Gen. Caloperdix.—*Blyth.*

Bill longer and stouter than in *Arboricola*; tarsus stout and strong, double-spurred in the males. Plumage of the sexes alike.

**106. Caloperdix oculea** (*Temm.*), *Salvad.*, *Ucc. Born.* p. 310; *Hume and Dav.*, *Str. F.* vi. p. 449; *Hume and Marsh.*, *Game Birds Ind.* iii. p. 101, pl.; *Hume*, *Str. F.* viii. p. 111; *Oates*, *B. Br. Burm.* ii. p. 329; *Murray*, *Avif. Brit. Ind.* ii. p. 566, No. 1229. Perdix oculea, *Temm.*, *Pig. et Gall.* iii. p. 732. Tetrao ocellatus, *Raffl.*, *Trans. Linn. Soc.* xiii. p. 322. Caloperdix ocellata, *Blyth*, *B. Burm.* p. 151.—The FERRUGINOUS WOOD PARTRIDGE.

Whole head, neck, breast, and abdomen chestnut, darkest on the crown and palest on the throat; a streak over the eye paler chestnut than the other parts; tips of the ear coverts black; lower abdomen and vent ashy white; base of the neck above, back, scapulars, sides of the breast and of the body black, each feather with a subterminal white bar; lower back and rump black, each feather with a central oval spot of chestnut; upper tail coverts black, each feather with an irregular V-shaped mark of chestnut; flanks chestnut, with oval black drops; thighs plain chestnut; under tail coverts mixed chestnut and black, the longer ones black, tipped with fulvous white; tail brownish black, the two centre pairs of feathers irregularly marked with zigzag lines of pale fulvous; primaries plain brown, all but the first three tipped with fulvous; secondaries brown, edged on the outer webs with fulvous, the edging increasing in extent till it occupies the whole of the web on the inner secondaries; tertiaries and coverts liver brown, each feather with a black drop near the tip and the coverts narrowly edged with rufous; under wing coverts

brown. (*Oates.*) Legs and feet pale dirty green; bill black; irides deep brown. (*Davison.*)

*Length.*—11 inches; tail 2·5; wing 5·8; tarsus 1·8; bill from gape 1.

*Hab.*—British Burmah in Tenasserim, south of Mergui; tolerably abundant at Malewoon and Bankasoon Found also throughout the Malay Peninsula and Sumatra.

### Gen. **Rollulus**.—*Bonn.*

Claw of the hind toe wanting; no spurs; head crested; bare orbital space crimson.

**107. Rollulus roulroul** (*Scop.*), *Wald., Ibis,* 1872, p. 382; *Salvad., Ucc. Born.* p. 308; *Hume and Dav., Str. F.* vi. p. 448; *id., Str. F.* viii. p. 111; *id. and Marsh., Game Birds* ii p. 103. pl.; *Oates, B. Br. Burm.* ii. p. 330. *Murray Avif. Brit. Ind.* ii. p. 561, No. 1230. Phasianus roulroul, *Scop., Del. Flor. et Faun. Insubr.* ii. p. 93. Tetrao viridis, *Gmel., Syst. Nat.* i. p. 761. Columba cristata, *Gm., Syst. Nat.* i. p. 774. Perdix coronata, *Lath., Suppl. Ind. Orn.* pl. lxii. Rollulus cristatus, *Blyth and Wald., B. Burm.* p. 151.—The Red-crested Wood Partridge.

A long crest of feathers from the hinder part of the crown to the nape maroon; base of crest in front white; head and neck black; lower plumage, sides of the breast and lesser wing coverts bluish black; median and greater coverts, secondaries and tertiaries dark brown, freckled more or less with rufous brown on the outer webs; back, rump and upper tail coverts glossy bluish green; tail black; outer webs of primaries rufous, freckled with brown; inner webs plain brown.

The female has no crest, but there are a few hairs springing from the forehead, the whole head and neck are grey, and there is a band of dull black on the hind neck; whole of the plumage green, washed with slaty on the abdomen and vent; tail slaty brown; wings and their coverts chestnut, more or less freckled with brown. Legs, feet and base of bill scarlet-red; rest of bill black; irides slaty grey; facial skin bright red.

*Length.*—11 inches; tail 2·5; wing 5·5; tarsus 1·6; bill from gape 0·8.

*Hab.*—The extreme south of Tenasserim, extending down the Malay Peninsula, to Sumatra and Borneo. According to Davison it is always found in small parties of six or eight or more; keeps to the dense forests, and never ventures in the open; lives on berries, seeds and insects.

### Gen. **Perdicula**.—*Hodgs.*

Bill short, thick, curved; tarsus with a blunt tubercle; wings rounded; outer webs of most of the primaries sinuated; tail short, of 12 feathers. Size small.

**108. Perdicula asiatica** (*Latham*), *Gould*, *B. A. S.* part xv. pl. 12; *Temm.*, *Pl. Col.* p. 447; *Hume*, *Str. F.* vii. p. 156; *Hume and Marsh.*, *Game Birds* p. 109, pl. *Murray*, *Avif. Brit. Ind.* ii. p. 562, No. 1231. Coturnix pentah, *Sykes*, *Trans. Zool. Socy.* ii. pl. 3; *Hardw.*, *Ill. Ind. Zool.* 2, pl. 45, fig. 3. Perdicula cambayensis, *apud Jerd.*, *B. Ind.* iii. p. 581, No. 826.—The JUNGLE BUSH QUAIL.

Above rich dark reddish brown, mottled with dull rufous; supercilium rufous white, narrowly edged with black, an indistinct pale line from the gape; feathers of the back of the neck and the back white shafted; scapulars and wing coverts richly marked on their inner webs with pale creamy white and black; primaries red-brown with tawny spots and bars; tail with a few black bars; chin rich chestnut; rest of the under surface white, tinged with rufescent on the lower abdomen, flanks, vent and lower tail coverts, and with numerous cross bars of black, smallest on the throat and sides of the neck. Bill dusky, tinged with reddish; irides light brown; legs yellowish red.

*Length.*—6·5 to 7·2 inches; wing 3 to 3·5; tail 1·5 to 1·78; tarsus 0·94 to 1; bill from gape 0·5 to 0·6.

*Hab.*—Generally distributed throughout India, Ceylon, Malabar Coast, the Wynaad, Mysore, Madras, Eastern Ghauts, Western Ghauts, Khandalla, Mahableshwar, Rutnagherry, and South Konkan generally; Chanda, Seoni, Nursingpur, Manbhoom, Rajmahal hills, Mirzapoor, Etawah, Kuchawan Hills, Mount Abu, Lucknow, Umballa, the Dhoon, Mussoorie, Simla, lower Himalayan ranges below Kumaon and Kashmir, are some of the recorded localities given by Mr. Hume, where this species is common. They always keep in small coveys in grass jungle or stubble long enough to hide them. They feed of course on seeds and grains of sorts. For the table Bush Quails in general are hard, dry, and insipid, and require a good deal of sauce and condiments to make a fair dish; grilled dry they are often found favour with, especially if kept till a little "gamey." Breeds from September to January according to locality, making a nest on the ground under the shelter of some bush or tuft of grass. It is shallow and circular, and lined or made up of grass roots, grass and a few dead leaves. Eggs, 5—7 in number, regular ovals, more or less pointed towards one end, with a faint gloss, andin colour spotless creamy white. Size from 0·96 to 1·1 in length and 0·79 to 0·9 in breadth.

**109. Perdicula argoondah**, *Sykes*, *Trans. Zool. Soc.* ii. pl. 2; *Jerd.*, *B. Ind.* iii. p. 583, No. 827; *Hume*, *Nests and Eggs Ind. B.*, p. 545; *id.*, *Str. F.* vii. p. 156; *Hume and Marsh.*, *Game Birds* ii. p. 117; *Murray*, *Avif. Brit. Ind.* ii. p. 563, No 1232.—The ROCK BUSH QUAIL.

Upper plumage brownish rufous, the feathers minutely freckled and lineated with black and tawny; feathers of the head and neck tipped with black; some of the scapulars and wing coverts with irregular black blotches;

primaries dark brown, with tawny bars on their outer webs; tail with the lateral feathers also barred; supercilium from the base of the bill over the eye bordered by dusky, and another shorter one from the gape; cheeks, sides of the face, chin and throat bright rufous; under surface of the body, including the sides of the neck white, with numerous cross bars of black; flanks tinged with rufous; also the lower belly and thigh coverts. Bill dark slaty; irides brown; orbits pale; legs red.

*Length.*—6·7 to 7·25 inches; wing 3·1 to 3 5; tail 1·5 to 1·9; tarsus 0·75 to 1·0; bill from gape 0·5 to 0·67.

*Hab.*—The Punjab, N.-W. and Central Provinces, Central India, Rajpootana, Eastern Madras districts, Coimbatore, Mysore, throughout the Deccan, in Bundelkund, Deesa, the Panch Mahals, Kutch, Sambhur Lake, Jodhpore, and Mount Abu, but not in Sind nor anywhere in Lower Bengal. Affects rocky hills with low scrub jungle. Though very difficult to shoot, either with or without dogs, the Rock Bush Quail affords excellent practice both for the eye, and precision of firing at rapid short flight birds. Like other Bush Quails, the flesh is white, but insipid. Jerdon's recipe is to get "one to two pounds of the best beefsteak, then take twelve Bush Quails nicely plucked and cleaned, cram a dessert spoonful of *pate de foie gras* inside each bird, and wrap each up in a thin slice of bacon, add a small tin of truffles, half a bottle of button Mushrooms, six hard-boiled eggs, each cut in half, sauces, condiments, &c., *selon le gout*, and fill in with rich stock (a couple of hares boiled down with a shin bone will do famously); then, if your cook makes a good crust and the pie is baked slowly and properly, you will find, as Jerdon says, that Bush Quail are very good in a pie. Breeds from August to December and again in March. Eggs. 6—7, of the type of the Jungle Bush Quail.

### Gen. **Ophrysia**.—*Gray.*

General characters the same as those of Perdicula.

**110. Ophrysia superciliosa** (*J. E. Gray*), *Hume, Str. F.* vii. p. 434; *id. and Marsh., Game Birds* ii. p. 105; *Gould, B. Asia*, pl.; *Murray, Avif. Brit. Ind.* ii. p. 563, No. 1233.—The MOUNTAIN QUAIL.

Lores, chin, throat and sides of the face and ear coverts deep black; forehead and a broad stripe above and behind the eye silvery grey, the feathers of the forehead paler shafted at base, and darker on the shaft towards the tip; hind head and nape light greyish brown; upper surface of the body, tail and under surface olive, tinged with grey on the breast and abdomen; all the feathers of both surfaces margined on each side with a line of black; under tail coverts black, every feather with a small tooth-like mark of white on each side near the base, a similar but larger mark about two-thirds from the base, and two coalescing oval spots of white at the tips; bill reddish; tarsi brown. Total length 9 inches; bill 0·62; wing 3·5; tail 2·75; tarsi 1·33.

*Female.*—General tint cinnamon brown, with a rufous edging to each feather; those of the upper surface with light coloured shafts and triangular mark of dull black on the inner web near the tip, preceded by a small mark of the same hue as the shafts; on the under surface the dark mark occupies the centre of the tip of each feather, and is of a lanceolate form; the throat is pale greyish cinnamon, as is also the head, where there is an indication of the superciliary stripe seen in the male; the feathers of the crown and behind the eye being somewhat greyer than the others, and having polished shafts; on each side of the nape a dark stripe as in the male; tail irregularly barred with black; under tail coverts dark cinnamon, with a stripe of black in the centre, between which and the margin is a stripe on each side, which unites with a large patch of the same hue near the tip. (*Gould*, *B. of Asia.*) Bill coral red; legs and feet pinkish.

*Length.*—10 inches; wing 3·6; tail 3·3; tarsus 1; bill from gape 0·58.

*Hab.*—Only known from Mussoorie in the neighhourhood of Naini Tal.

### Gen. **Microperdix**, *Gould.*

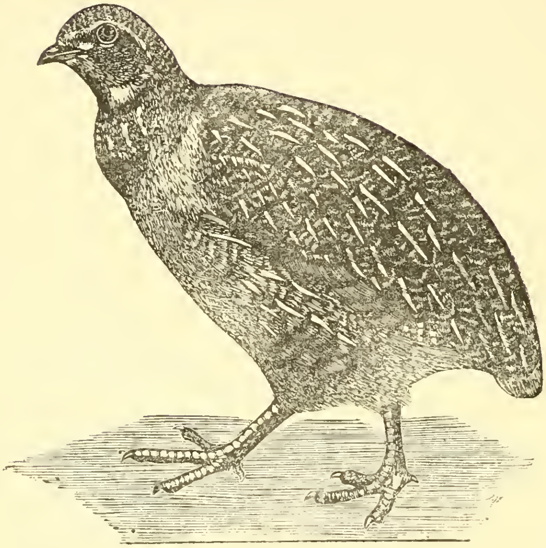
Bill red, slender, no tarsal tubercle in the male, otherwise as in *Perdicula.*

**111. Microperdix erythrorhyncha** (*Sykes*), *Hardw.*, *Ill. Ind. Zool.* 2, pl. 44, f. 2; *Gould*, *B. Asia* pt. xiv. pl. xvi.; *Murray*, *Avif. Brit. Ind.* ii. p. 564, No. 1234. Coturnix erythrorhyncha, *Sykes*, *Trans. Zool. Soc.* vol. ii. pl. i. Perdicula erythrorhyncha, iii. p. 584, No. 828.—The Painted or Red-billed Bush Quail.

Forehead, lores and crown of the head black; a white frontal band continued as a supercilium over each eye; upper plumage rich olive brown with black lunules; scapulars, wing coverts and secondaries with large patches of black, the shafts pale yellow and some faint cross lines of the same; primaries brown, the outer webs barred with dark rufous; tail brown, with black spots, and barred with narrow pale lines; beneath the chin is pure white bordered by black; rest of lower parts rufous, passing into olive brown on the sides of the neck and with a few spots of black on the breast and side of the neck; flanks with large spots of deep black tipped with white. Bill and legs fine red; irides yellow brown.

*Length.*—6·5 inches; wing 3; tail 1·5; tarsus 1. The female has the head brown, and the white parts rufous.

*Hab.*—Southern India, from the Wynaad to the Deccan in Poona Has also been obtained in Coorg and on the Neilgherries; also at Karlee above the Khandalla Ghauts, and near Dharwar. Habits the same as Bush Quails, living in small bevies. Breeds in the Neilgherries from August to November. According to Mr. Mahon Daly, it is very common amongst the coffee on the Shevaroys, and often in rocky ground with low jungle. They go about nearly always in pairs, and not in large bevies as stated by Jerdon. They lay from



COTURNIX COMMUNIS.

6 to 8 eggs on the ground, with just a few leaves placed around the nest. It is very daring. Mr. Daly adds that he has seen it fly at a dog in defending its brood. January to March, and again September and October, are the months in which this species breeds. The eggs are long ovals, pointed towards one end, rather glossy and spotless *café au lait*, varying in length from 1·35 to 1·45 inches, and in breadth from 0·87 to 0·95.

**112. Microperdix Blewitti**, *Hume, Str. F.* ii. p. 512; *id. and Marsh., Game Birds* ii. p. 129, pl. *Murray, Avif. Brit. Ind.* ii. p. 565, No. 1235.—The Eastern Painted Bush Quail.

Very similar to *M. erythrorhyncha*, but differs in the male having the black frontal band much narrower, and the white band surmounting it, also the supercilium, broader; the chestnut of the lower surface is much paler; the feathers of the upper breast, sides of the breast, part of the upper mandible fringed with greyish pink, with black subterminal spots much larger and more widely spread; upper surface paler brown; chin very narrowly black, or pure white. Irides brown; bill, legs and feet coral red.

*Length.*—5·9 to 6·5; wing 2·8 to 3·15; tail 1·4 to 1·6; tarsus 0·87 to 0·91; bill from gape 0·5 to 0·6.

*Hab.*—Chota Nagpur, in the Raipur, Sambulpoor, Bhandara, Mandla and Seoni districts of the Central Provinces; affects grass patches and fields in fairly large bevies. Breeds during June and July. The flesh like that of all the *Perdicinæ* is delicate and well flavoured.

## Sub-Family.—COTURNICINÆ.—Quails.

Wings long, rather pointed; bill moderate; tarsus not spurred; tail short, covered by the upper tail coverts.

### Gen. Coturnix.—*Brisson.*

Bill short, straight, very slightly curved at the tip; tarsi not spurred; tail short; wings long and pointed; 1st and 2nd quills longest.

**113. Coturnix communis** (*Linn.*), *Bonn., Tabl. Enc. Meth.* p. 217; *Bodd, Pl. Enl.* 170; *Jerd., B. Ind.* iii. p. 586, No. 829; *Hume, Nests and Eggs Ind. B.* p. 549; *Blyth, B. Burm.* p. 151; *Dav. et Oust. Ois. Chine*, p. 396; *Dresser, B. Eur.* vii. p. 298; *Hume, Str. F.* viii. p. 111; *Scully, Str. F.* viii. p. 350; *Hume and Marsh., Game Birds* ii. p. 133, pl.; *Hume, Str. F.* x. p. 236 (*note*); *Murray, Hdbk., Zool., &c., Sind*, p. 203; *id., Vert. Zool., Sind*, p. 215; *Oates, B. Br. Burm.* ii. p. 331; *Murray, Avif. Brit. Ind.* ii. p. 565, No. 1236.—The Common European or Large Grey Quail.

PLATE.

The following synopsis of the two known species will suffice to identify them:—

Primaries *with pale rufous bars* on their outer webs.—*C. communis.*

Primaries *without* pale rufous bars on their outer webs.—*C. coromandelica.*

Top of head brown, the feathers edged paler; a mesial buffy line on the crown; supercilium pale yellowish white, reaching above the ear coverts, which are partially brown; lores and a line below the eye white; sides of the neck white; two narrow blackish lines from the sides of the neck to below the throat, the interspace being white; the upper black band not always perfect; chin and throat patch dark brown; breast pale buff, buffy white or rufous, with pale shafts to the feathers; sides of the breast and flanks similar or deeper in colour, with pale shafts; abdomen white, pale rufous, or buff; back, scapulars and upper tail coverts from brown to a rich dark brown, each feather shafted a rich rufous, or buff, with three transverse bars or bands of the same colour on each side, the tips being pale buff; *primaries dusky brown with pale rufous bars on their outer webs;* the secondaries with pale tips, and the tertials barred buffy on both webs, the borders of the buffy bars darker than the ground colour of the feathers. The female is like the male, but wants the central throat patch, and the breast is spotted with brown or dark brown. She is also much larger.

*Length.*—7 to 8 inches; wing 4 to 4·5; tail 1·6 to 2·25; irides brown or hazel; legs pale fleshy; bill blackish with a brownish horny tinge above and at the tip.

*Hab.*—Sind, Punjab, Beloochistan, Afghanistan, Persia, Arabia, the Deccan, N. Guzerat, Rajputana, Kutch, Kattiawar and Southern and Central India generally to Nepaul. A rare visitor to Burmah and in the countries S.-E. of the mouths of the Ganges, Chittagong, Arracan and Pegu, where it may be considered a straggler. It is found throughout Europe and nearly the whole of Asia. The greater bulk of these which come into India, Hume says, are migratory. They arrive from the North from Central Asia across the Himalayas, and from the west from Persia, Beloochistan, &c. Hume adds, that arrived within our boundaries, while a certain number remain scattered about, some remaining in the lower ranges and valleys of the Himalayas up to an elevation of 4000 to 5000 feet, the greater bulk move forward, southwards and eastwards, and arrive about the middle of October in Sylhet, Bengal, and the Deccan, and frequent the crops of peas, millet, &c., to the end of March; their stay, however, depends much on the supply of food. They migrate invariably at night, and evidently in large numbers at a time. Numbers are netted throughout India, for the table, for quaileries, and the cock-birds for fighting purposes,—a favourite pastime nearly throughout India amongst Mahomedans. Breeds generally in the N.-W. and Upper Provinces of India, laying six eggs, from February to April. Eggs broad ovals, a good deal pointed towards one end. The ground colour is a clear yellowish or reddish buff, thickly speckled and freckled and thinly blotched with reddish brown.

**114. Coturnix coromandelica** (*Gmel.*), *Jerd.*, *B. Ind.* iii. p. 588, No. 830; *Hume, Nests and Eggs Ind. B.* p. 550; *id.*, *Str. F.* iii. p. 178; *Blyth*, *B. Burm.* p. 157; *Hume*, *Str. F.* viii. p. 111; *Hume and Marsh.*, *Game Birds* ii. p. 151, pl.; *Oates*, *Str. F.* x. p. 236; *id.*, *B. Br. Burm.* ii. p. 333; *Murray*, *Hdbk.*, *Zool.*, *&c.*, *Sind*, p. 203; *id.*, *Vert. Zool.*, *Sind*, p. 216; *Murray*, *Avif. Brit. Ind.* ii. p. 566, No. 1237. Tetrao coromandelica, *Gmel.*, *Syst. Nat.* i. p. 764.—The Black-breasted Rain Quail.

*Male.*—Top of head brown, with a longitudinal pale stripe on the crown; supercilium white, extending above and beyond the ear coverts; a white streak under the eye, followed by a dark brown one, which meets the first dark brown stripe running below the throat, and forming with its fellow on the other side a triangle, from the middle of which to the chin runs a broad throat stripe; a triangular patch of white on each side of the throat; there is also on the throat a second dark stripe behind the first, running down to the breast, the interspace between both being white; breast with a large jet black patch, some of the feathers of the lower part of which are edged with pale buff or white; sides of the breast dark rufous, the feathers pale shafted, and a few with dark spots on both webs; flanks and abdomen pale buff and white intermixed, the feathers black shafted; lower tail coverts and vent rufous; back, scapulars and upper tail coverts same as in the large grey quail, from which it may be readily distinguished *by the absence of rufous bars on the first two primaries*, the first primary having a pale outer edge, and by the well-defined lines on the chin and throat, and the patch on the breast, also by its much smaller size.

*Length.*—6·25 to 7 inches; wing 3·43 to 3·7; tail 1 to 1·5; irides dark brown; legs and feet pale fleshy; bill dusky black.

*Hab.*—Sind, Punjab, N.-W. Provinces, Oudh, Bengal, Beloochistan, Persian Gulf, Rajputana, N Guzerat, Kutch, Kattiawar, the Concan, Deccan, Central and parts of South India, also Dacca and Sylhet. Rain Quail visit India during the monsoon months, about the end of July, and remain to breed. The majority breed in the Deccan, Guzerat, Central India and parts of the Central Provinces. In Oudh, Behar and the N.-W. Provinces, only a very limited number remain to breed. July to October are the months in which they breed. The eggs are not unlike those of *C. communis*. They leave about the end of October or middle of November.

## Gen. Excalfactoria.—*Bonap.*

General characters similar to those of *Coturnix*. Wings less pointed and more rounded; 1st quill shorter than the 2nd; 3rd, 4th and 5th graduating very slightly from the 2nd.

**115. Excalfactoria chinensis** (*Linn.*), *Jerd.*, *B. Ind.* ii. p. 591; *Hume, Nests and Eggs Ind. B.* p. 553; *Salvad.*, *Ucc. Born.* p. 311; *Oates*,

*Str. F.* iii. p. 345; *Wald., Trans. Zool. Soc.* ix. p. 224; *Blyth, B. Burm.* p. 151; *David et Oust. Ois. Chine,* p. 397; *Hume and Dav., Str. F.* vi. p. 447; *Hume, Str. F.* viii. p. 111; *Oates, Str. F.* viii. p. 167; *Hume and Marsh., Game Birds* ii. p. 161 pl.; *Bingham, Str. F.* x. p. 196; *Oates, Str. F.* x. p. 236; *Murray, Avif. Brit. Ind.* ii. p. 567, No. 1238. Tetrao chinensis, *Linn., Syst. Nat.* 1. p. 277. Coturnix chinensis, *Legge, B. Ceylon,* p. 755.—The Blue-breasted Quail.

A narrow white line from the nostrils to the eye; forehead, feathers round the eye, ear coverts, breast, sides of the neck and of the body slaty blue; abdomen, vent and tail chestnut; upper plumage, wing coverts and tertiaries olive brown, marked with black and pale rufous, and most of the feathers with pale shaft streaks; primaries and secondaries plain brown; chin, throat, and cheeks black; a broad moustachial stripe from the gape white; a broad collar below the black of the throat white, succeeded by a narrow band of black. The female has the upper plumage almost similar to the male; the supercilium, forehead and throat are rufous, enclosing a dull white chin; sides of the head pale rufous, speckled with black; lower plumage pale buff; all but the centre of the abdomen barred with black. Bill bluish black; irides red; eyelids plumbeous; legs bright yellow.

*Length.*—5·7 inches; tail 1; wing 2·8; tarsus 0·8; bill from gape 0·5.

*Hab.*—Generally distributed over Eastern India and Ceylon. Occurs in Bengal, Assam, Burmah, Southern and Cochin-China, the Malay Peninsula, Sumatra, Java, and Borneo. In Ceylon it is fairly common, especially towards the south of the island. In Burmah it is generally distributed, but is nowhere common except in Pegu, where it arrives in May in large numbers. In Raipur, Mandla, and the Chanda districts, also in the Tributary Mahals, Singbhoom, Calcutta, Cachar, Sylhet, Khasia hills, as well as in the Dafla hills and in the valley of Nepaul it is fairly common. It is also recorded from Arracan. Open, swampy grassy lands or meadows are their favourite haunts, and they are seldom found far from such spots. They do not appear shy but freely come into the open to feed. Breeds in Pegu, Cachar, Purneah, and the Sub-Himalayan districts from Sikkim to Kasauli. Lays from June to the 1st or 2nd week in September. Eggs, 5—6, broad ovals, of the shape of those of the Common Black Partridge, *café au lait* tinged with olive in colour. In size they vary from 0·95 to 1·04 in length and from 0·7 to 0·81 in width.

## **Family,** TINAMIDÆ.

Bill short, rather slender, and very slightly curved at the tip; tail short or none; tarsi not spurred; hind toe small or wanting.

### Gen. **Turnix.**—*Bonap.*

Characters the same as those of the Family; nostrils linear; 1st quill longest; no hind toe.

**116. Turnix plumbipes** (*Hodgs.*), *Hume, Nests and Eggs Ind. B.* p. 554; *Blyth, B. Burm.* p. 152; *Oates, Str. F.* v. p. 164; *Anders., Yunnan Exped.*, p. 673; *Hume and Dav., Str. F.* vi. p. 450; *Hume, Str. F.* viii. p 111; *Scully, Str. F.* viii. p. 350; *Hume and Marsh., Game Birds* ii. p. 177, pl.; *Oates, Str. F.* x. p. 236; *id., B. Br. Burm.* ii. p. 337. *Murray, Avif. Brit. Ind.* ii. p. 568, No. 1239. Hemipodius plumbipes, *Hodgs., Beng. Sport. Mag.* ix. p. 345. Turnix ocellatus (*Scop.,*) *Jerd., B. Ind.* ii. p. 597, No. 833. Turnix pugnax (*Temm.*), *Hume, Str. F.* iii. p. 178; *id., Nests and Eggs Ind. B.* p. 553. Turnix taigoor, *Sykes, Trans. Zool. Soc.* 2, pl.; *Jerd., B. Ind.* iii. p. 955, No. 832; *Hume and Marsh., Game Birds* ii. p. 169, pl.—The Indo-Malayan Bustard Quail.

Above rufous with transverse black lines and pale yellow streaks; below rufescent or pale ferruginous, becoming chestnut on the flanks and undertail coverts; the foreneck, breast and sides of the body lunated with black.

The *female* is a much larger bird, and the plumage is darker; the crown and sides of the head, the sides and back of the neck are spotted with white; chin, throat and breast black; sides of the breast and body lunated with black. Legs and feet plumbeous or pale leaden; irides pearly grey.

*Length.*—5·6 to 6·25; wing 3·12 to 3·5; tail 1·0 to 1·4; tarsus 0·95 to 1·12; bill from gape 0·7 to 0·81.

*Hab.*—Throughout India nearly (except Sind, Kathiawar and Jodhpoor, and other similar dry places), extending to Ceylon, Burmah, the Malay Peninsula, Siam, and Cochin-China. It frequents gardens, land covered with grass, also bushes, roadsides, &c. Breeds in July and August, wherever it occurs, laying 4—6 eggs, of a stone grey colour, irrorated with small specks of brown interspersed with larger spots of a neutral tint.

It will be seen that I have made *T. taigoor* a synonym of *T. plumbipes.* There can be no doubt of both species being identical; the rufous tint of the Malayan race can only be considered as climatic. There are no other characters which could be considered sufficient to warrant a separation.

**117. Turnix joudera** *Hodgs., Beng. Sport. Mag.* 1838, pl. 1, fig. 1; *Jerd., B. Ind.* iii. p. 599, No. 834; *Str. F.* vii. p. 453; *Hume, Nests and Eggs Ind. B.* p. 556; *id. and Marsh., Game Birds* ii. p. 187, pl.; *Murray, Avif. Brit. Ind.* ii. p. 569, No. 1240. Turnix Dussumieri, *apud. Jerd.*, viii. p. 599.—The Indian Button Quail.

*Male.*—Top of head light brown with a faint longitudinal streak on the crown; back of neck, back and scapulars ferruginous brown, the feathers behind the head with dark spots, and those of the back, scapulars and under tail coverts with narrow transverse striæ, distinct on the lower part of the

back; scapulars with a few white spots or edgings to the feathers; wing coverts pale earthy brown, the tips broadly white, each with a dark ocelli in the centre; primaries pale earthy brown, narrowly edged with pale white; chin and upper throat white; middle of breast ferruginous, the sides of the breast like the scapulars, with white tipped feathers, in the middle of which is a dark spot; under parts ferruginous; vent whitish.

*Length.*—5·5 to 6 inches; wing 2·75; bill at front 0·43.

*Hab.*—Sind, Punjab, N.-W. Provinces, Oudh, Bengal, Rajputana, Kutch, Guzerat, Deccan, South India; Kutch, Kattiawar, N. Guzerat, Rajputana and Punjab during the rains; rare in the Deccan and sparingly distributed in Bengal; affects chiefly large open grassy plains; occurs also in South Travancore, and probably in Ceylon.

**118. Turnix Dussumieri** (*Temm.*), *Blyth, Ibis*, 1867, p. 161; *Hume, Nests and Eggs Ind. B.* p. 556; *David et Oust. Ois. Chine*, p. 397; *Hume, Str. F.* viii. p. 111; *Hume and Marsh., Game Birds* ii. p. 193, pl; *Oates, Str. F.* x. p. 237; *id., B. Br. Burm.* ii. p. 336; *Murray, Avif. Brit. Ind.* ii. p. 570, No. 1241. Hemipodius Dussumieri, *Temm., Pl. Col.* 454, fig. 2. Hemipodius Sykesi, *Smith, Ill. S. Afr. Zool. Aves. Sub.* tab xvi.; *Murray, Hdbk., Zool., &c., Sind*, p. 204; *id., Vert. Zool., Sind.*, p. 217.—The Little Button Quail.

*Male.*—Head brown, barred with black, and with a central longitudinal yellowish stripe; supercilium pale white or yellowish white; back and scapulars chestnut brown, the feathers with fine dark transverse striæ and edged with yellowish white; rump and upper tail coverts dark brown, closely barred with black, the feathers with whitish edges; throat white, with a few dark spots on the sides; breast pale ferruginous, the feathers on the sides with dark spots or lunules; abdomen whitish.

*Length.*—5 to 5·5 inches; wing 2·75; irides light yellow; legs and feet pale fleshy.

*Hab.*—Sind, Punjab, N.-W. Provinces, Oudh, Bengal, Rajputana, Kutch, Guzerat, and the Concan during the monsoon, in grassy plains or cultivated fields. In the Deccan it is very numerous and difficult to flush from the fields of pulse which it affects. Said to breed in the Himalayas and N.-W. India.

**119. Turnix maculosa** (*Temm.*), *Hume, Str. F.* ii. p. 281; iii. p. 179; *Hume and Dav., Str. F.* vi. p. 452; *Hume, Str. F.* viii. p. 111; *Hume and Marsh., Game Birds* ii. p. 183, pl.; *Bingham, Str. F.* ix. p. 196; *Oates, Str. F.* x. p. 236; *id., B. Br. Burm.* ii. p. 335; *Murray, Avif. Brit. Ind.* ii. p. 570, No. 1242. Hemipodius maculosus, *Temm., Pig. et Gall.* iii. p. 631. Turnix maculatus, *Vieill., Nouv. Dict. d'Hist. Nat.* xxxv. p.

47; *David et Oust. Ois. Chine* p. 398. Turnix Blanfordi, *Blyth, J. A. S. B.* xxxii. p. 80; *Blyth and Wald., B. Burm.* p. 151.—Blanford's or the Burmo-Malayan Button Quail.

Upper plumage rufous, black and yellow, the first two colours preponderating, *and the yellow disposed in oval drops not streaks*; wing coverts yellowish-buff, with large black spots; hind neck and upper back rufous, forming a broad collar; crown of the head blackish with a pale rufous mesial line; sides of the head buff, barred with black; chin and throat buffy white; breast, sides of the body, vent, flanks and under tail coverts ferruginous; sides of the breast and sides of the body with large ovate or round spots of black. (*Oates.*) Legs yellow; upper mandible dark brown; lower mandible and gape pale brown, tinged with yellow; irides white.

*Length, Male*—6·5 inches; female 7; wing 3·62; tail 1·5; tarsus 1; bill from gape 0·75.

*Hab.*—Tenasserim, in Pegu, Arracan, and Hill Tipperah. Found about gardens or in the immediate vicinity of cultivation. It is said to be hard to flush, and only flies a short distance before again dropping. It is everywhere thinly distributed, and is a terrible skulk, like *joudera*, an allied species which is barely separable from this. Nothing is known of its habits or nidification.

**120. Turnix albiventris**, *Hume, Str. F.* i. p. 310; ii. p. 281; *id. and Marsh., Game Birds.* ii. p. 199, pl.; *Murray, Avif. Brit. Ind.* ii. p. 571, No. 1243.—The Nicobar Button Quail.

Lores and a circle round the eye pale fulvous; base of bill and two stripes along the crown to the nape black, the feathers narrowly margined with chestnut; ear coverts fulvous, tipped darker; sides of the neck fulvous buff, spotted with black; sides and back of the neck, interscapulary region and scapulars bright chestnut, more or less variegated with yellowish white and black; lower back and rump, also the upper tail coverts blackish brown, the feathers tipped with chestnut, and a subterminal freckled bar of the same colour; tail feathers greyish brown with obsolete blackish brown bars; primaries, secondaries and greater coverts pale satin brown, the outer web of the first nearly white; rest narrowly edged with pale fulvous; tertiaries pinkish-brown, mottled with blackish brown towards their tips, and with a yellowish brown spot there on the outer webs; most of the secondary coverts pale buff, with blackish brown irregularly shaped spots near the tips; chin and upper portion of the throat pure white; rest of throat and middle of breast light feruginous; sides of the breast pale buff, with regular narrow transverse blackish brown bars; middle of abdomen white; sides, vent, tibial plumes, flanks and lower tail coverts tinged buffy. The female has the black stripes on the head, edged with white and not chestnut; the stripe dividing them is

also white; back of the neck and upper back occupied by a broad, intensely bright chestnut collar, entirely unmarked and unspotted; ear coverts, sides of the head, and a line under the eye pale fulvous, dotted with black; entire chin, throat and upper breast bright ferruginous; rest of the plumage like that of the male; irides white; legs and feet yellow, tinged orange; upper mandible horny brown, yellowish at gape; lower mandible yellow, tipped horny.

*Length.*—6 inches; wing 3; tail 1·4; tarsus 0·9; bill from gape 0·7.

*Hab.*—Port Blair in the Andamans; also the Nicobar Islands.

## ORDER, GRALLATORES,—Waders or Shore Birds.

Tarsi long, rounded; tibia bare to a greater or less extent; hind toe imperfect in most or absent; wings long; neck long or of moderate length, generally in proportion to the length of the legs; bill variable in size and structure. All, except the Ostriches and Emeus (which do not fly) fly well, and stretch their legs out behind them during flight.

### Tribe, PRESSIROSTRES.—*Cuvier.*

Hind toe small, absent or moderate; bill depressed at base, and rather compressed on the sides. It comprises the *Otitidæ* or Bustards and Floricans; the *Cursoridæ*, or Courier Plovers; *Glareolidæ* or Swallow Plovers; *Charadridæ* or Sand Plovers; *Hæmatopodidæ* or Shore Plovers, and the *Gruidæ* or Cranes.

### Family, OTITIDÆ.

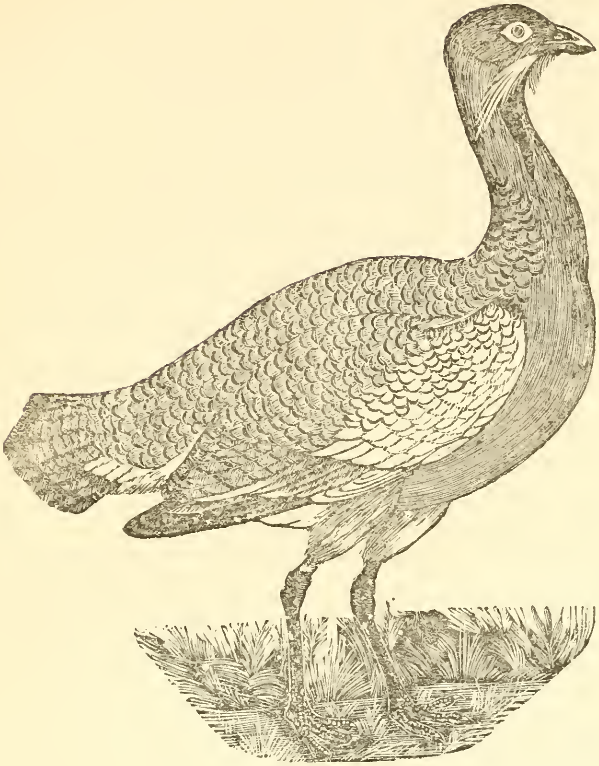
Bill compressed, the tip scooped, and slightly curved; nostrils in a membranous groove, partially closed; wing, 2nd to 4th quills longest; tertials nearly as long as the primaries; tarsi reticulated; hind toe absent; plumage mottled fulvous and black. Food insects, young shoots, and grain. As game all the members of the family Otitidæ are eagerly sought after. For the table there is scarcely any other bird so succulent and delicious.

#### Gen. Otis.—*Lin.*

Bill moderately long, pointed and nearly straight; legs long, and strong; tarsi reticulated; claws short and blunt; wings ample; moustachial tufts long.

**121. Otis tarda**, *Linn., Syst. Nat.* ii. p. 279; *MacGillivray, B. Eur.* iv. p. 31; *Hume, Str. F.* vii. p. 434; *id. and Marsh., Game Birds*

p. i. pl.; *Murray, Avif. Brit. Ind.* ii. p. 572, No. 1244.—The European Bustard.



Otis tarda.

Head and upper neck all round are light greyish-blue; on the upper part of the head is a longitudinal brown band; the elongated moustachial feathers white; the lower part of the neck interiorly is pale yellowish red; the forepart of the breast pale greyish blue, fading into white, of which colour are the other lower parts, excepting the sides of the lower neck and body, which are light yellowish red, barred with black, each feather having two subterminal unequal bars, and generally several spots; the tail feathers are similar, but tipped with white, and having the base of that colour; the outer wing coverts, secondary coverts, and inner secondary quills are white, the former tinged with grey; the primary quills brownish black, with the shafts white.

*Male.*—Bill pale yellowish brown, darker on the ridge; iris hazel; feet light brown, as are the claws.

*Length.*—To end of tail from 40 to 48 inches.

*Female.*—The female is much inferior in size to the male, generally weighing only ten or twelve pounds; there are no elongated feathers on the sides of the head; the bare parts are coloured as in the male; the upper part of the head is yellowish red, barred with black; the foreneck greyish blue, without any red at its lower parts; the colouring of the other parts as in the male; but the black markings on the back and tail more numerous.

*Length.*—To end of tail about 35 inches. (*MacGillivray*, vol. iv., p. 31.)

*Hab.*—According to Hume, has only once occurred within our limits in 1870, north of the Kabul river in Hastnagar, within a few miles of the most north-westerly point of British India proper in Lat. 34° N. and Long. 71·45 E.

**122. Otis tetrax,** *Lin.*, *Syst. Nat.* iii. p. 279; *MacGillivray*, *B. Eur.* iv. p. 31.; *Hume*, *Str. F.* ii. p. 423; *id. and Marsh.*, *Game B.* p. 4, pl.; *Murray*, *Avif. Brit. Ind.* ii. p. 573, No. 1245.—The Lesser Bustard.

*Male in Summer.*—Upper part of the head and the nape are pale reddish yellow, thickly variegated with longitudinal and transverse brownish black markings; sides of the head and throat to the length of two inches greyish-blue, with an inferior black margin, succeeded by a narrow ring of white, extending more than an inch downwards in front in a pointed form; middle of the neck, all round, for the length of two inches and a half, deep black, succeeded below by a half collar of white and another of black; all the lower parts white, excepting some feathers on the fore and lateral parts of the breast, which are similar to those of the back. Upper parts, including the back, scapulars, many of the small wing coverts, with the inner secondaries and their coverts, light reddish yellow, beautifully undulated transversely with brownish black; the upper tail coverts with white in place of yellow; wing with a broad band of white, commencing at the carpal joint, including the alula; eight of the outer secondary quills and their coverts are white at the base, chocolate brown and mixed with grey towards the end, with the tip white, which becomes gradually more extended on the inner primaries, of which the tenth has only a narrow band of brown near the end; tail feathers are also white at the base and tip; in the rest of their extent pale yellow, undulated with black, and having three distinct transverse bands of the latter colour, the lateral feathers gradually becoming more white, and losing one of the black bands.

Bill brown, greyish blue at the base, the ridge and tips dusky; irides reddish yellow; feet light brownish grey; scutella of toes darker; claws dusky.

*Length.*—To end of tail 18 inches; bill along the ridge 1, along the edge of lower mandible 1·33; wing from flexure 10; tail 4·25; bare part of tibia 1; tarsus 2·66.

*Female.*—The female, which is about the same size, differs in having none of the blue or black so conspicuous on the neck of the male; the upper part of

the head, its sides, and the neck all round, are pale reddish yellow, variegated with dark brown, each feather having a broad median longitudinal band and several transverse bars; throat yellowish white; upper parts as in the male, many of the feathers with large patches of black in the middle; wings and tail as in the male, but with the white less extended and barred with black; lower parts yellowish white; feathers of the breast and sides with transverse black lines; lower tail coverts black shafted. In winter the male resembles the female. (*MacGill.*)

*Hab.*—The Punjab and N.-W. Provinces. A regular and tolerably abundant winter visitant. Said to breed in Afghanistan.

### Gen. **Eupodotis**.—*Less.*

Bill long, pointed, straight, the tip curved; legs long and strong; male with a pouch; wings ample.

**123. Eupodotis Edwardsi**, *Gray*, *Ill. Ind. Zool.* pl. 59; *Gould*, *C. B.* pl. 72; *Jerdon*, *B. Ind.* iii. p. 607; *Murray*, *Hdbk.*, *Zool.*, &c., *Sind*, p. 204; *id.*, *Vert. Zool. Sind*, p. 217; *Hume and Marsh.*, *Nests and Eggs* iii. p. 557; *id.*, *Game Birds*, i. p. 7, pl.; *Murray*, *Avif. Brit. Ind.* ii. p. 574, No. 1246. (*Tokdar*, Sind.)—The Indian Bustard.

*Male.*—Top of head and crest black; sides of the face, neck all round, breast and entire lower parts white; the feathers of the breast and lower part of the neck long and hackled, those of the breast covered with minute dusky mottlings; a dark band across the breast; back, scapulars, wing and upper tail coverts brown, pale buff, or grey brown, beautifully mottled and vermiculated with minute black striæ; primaries snuff brown, darker on their inner webs, and tipped with white; some of the inner ones with 3—4 white patches on their inner webs; secondaries slaty, much irrorated basally, and broadly tipped with white; tertials as long as the primaries, concolorous with the back, also the lesser wing coverts; median coverts black, tipped with white; greater wing coverts slaty grey, also tipped with white. Tail like the back with a subterminal dark band and tipped with white; flanks and sides dark brown, mixed with whitish or dark olive brown; vent and lower tail coverts the same as the back, with white tippings to the feathers.

*Male*, *Length.*—45 to 50 inches; expanse of wing 85—95 inches; wing 24·5 to 29; bill from gape 4 to 4·75; tarsi 7·5.

*Female*, *Length.*—36 to 38 inches; wings 20 to 22; legs and feet creamy yellow; irides yellow; bill yellowish at tip, dusky at the base.

*Hab.*—Sind (Thurr and Parkur), Punjab, N.-W. Provinces, Kutch, Rajputana, N. Guzerat, Kattiawar, Jodhpore, Hydrabad (Deccan), Poona, Satara, Berars, and the Central Provinces. According to Mr. Doig, (*Hume, Game Birds*,) it is a permanent resident and breeds in the Thurr and Parkur districts. It is said to wander occasionally in the cold weather to the plains along the

edge of the desert, sometimes going even as far as the Indus. It feeds on grain and insects, and frequents the cultivated districts at other than the breeding season. Jerdon has an excellent description of its habits, &c. Breeds from July to September, laying from one to two eggs in a depression in the ground behind tufts of grass or small bushes, lined very sparingly with thin grass.

### Gen. **Houbara**.—*Bonap.*

Legs shorter than in *Eupodotis*; bill rather lengthened and depressed at the base; males with a ruff; no hind toe.

**124. Houbara Macqueenii,** *Gray, Ill. Ind. Zool.* pl. 47; *Gould, B. As.* pl. 8; *Jerd., B. Ind.* iii. p. 612; *Murray, Hdbk., Zool., &c., Sind,* p. 204. *id., Vert. Zool. Sind,* p. 218; *Hume and Marsh., Game Birds Ind.* i. p. 17; *Murray, Avif. Brit. Ind.* ii. p. 575, No. 1247. (*Tilloor,* Sind.)—The Houbara Bustard.

*Male.*—Head crested; forehead minutely speckled with greyish brown and white; crown with a crest of elongate feathers, which are white at the base and tipped black; the feathers behind the crest resting immediately on the crown entirely white; head behind, ear coverts and neck pencilled with pale brown and white. The ruff begins immediately behind the ear coverts with elongated feathers, one-half of which are white at the base for more than one-half their length, and the rest shining black; the lower half of the ruff entirely white, the upper half edged behind and in front with black, rather lax feathers; back and scapulars buff or rufous buff, delicately pencilled with dark brown, each feather with two dark bands, the hinder band only being visible externally; upper tail coverts with 3—4 narrow dark bands, which are distant from each other about an inch; tail brighter rufous or buff, with the same pencillings, the feathers with three bluish ashy bands, and the tips white; under tail coverts white, some of the feathers with transverse bands and brownish mottlings; chin, throat and cheeks white, the feathers of the latter with dark tips; feathers of the lower neck and breast grizzled with pencillings, the elongated feathers on the breast pale bluish white, with dark shafts; rest of the lower surface white, also the axillaries and wing lining; primaries white at their base, and black for the terminal half, except the 1st primary, which in some specimens are dark brown on the outer web; lesser wing coverts whitish with very fine vermiculations; winglet black; bill horny brown; irides bright yellow; legs greenish yellow.

*Length.*—25 to 32 inches; wing 14 to 15; tail 8·5 to 10. In non-breeding plumage the male has no crest nor the elongated black and white feathers, but the dark lax feathers are well developed in their place.

*Hab.*—Sind, Persia, Beloochistan and Afghanistan, Punjab, N.-W. and Central Provinces, Rajputana, Kutch and Guzerat, also Kattiawar.

In Sind, this fine bird is extremely common during winter, affecting chiefly the large plains and hill sides covered with *Grewia* bushes, on the fruits of which they principally live. It is usually found in parties of 2, 4, or 6, and, as game, is much sought for by all sportsmen. It is also largely hawked by the Sindees, *Falco sacer*, *Juggur* and *peregrinus* being used for the purpose. It is found all over the plains of the Punjab, also in Beloochistan, Southern Persia and Afghanistan; breeding in Persia and Afghanistan, where it occurs in the summer. In Rajputana too it has been found, also in Kutch, Northern Guzerat and Kattiawar. The following, extracted from *The Field*, entitled "Oobara shooting in Lower Sind," I think by "an old Sindee," gives a fair account of the mode of shooting this Bustard. He says:—"So far as my experience goes, the Oobara, which may be briefly described as a bird of the Bustard tribe, is chiefly to be found in Sind. I have occasionally come across a solitary one or two in Rajputana and Guzerat, and I also presume they are to be met with in many parts of the Punjab, and, in fact, perhaps anywhere where large sandy plains exist. They are, I believe, seldom, if ever, to be found in black soil.

"The Oobara is a migratory bird, coming in with the cold weather, and disappearing at the first approach of the hot season. They are usually to be found in pairs, and feed early in the mornings and late in the evenings. At these times they are so wary, as seldom to be got at even by careful stalking. They appear, however, to be peculiarly susceptible to heat, as the moment the sun attains any power they retire into the shade of a bush, and, if undisturbed, lie quiet throughout the heat of the day, or if flushed, only take short flights. This is the time to get them, and the usual method is by stalking them on a well-trained camel, driven by an experienced shikaree. The camel is made to circle round and round the bird, and the moment the bird perceives this it crouches down, trusting to its colour, which is exactly that of the ground, and to being so exactly similar when in this position to the several stones lying around it, to escape observation. The circle gradually becomes smaller and smaller, until the bird is brought within range. Most men shoot it on the ground, but as a rule I have found it better sport and easier to let the bird rise before firing, and then dropping it on the wing. The bird fancying that (like an ostrich) when its head is hidden its whole body is out of sight, seldom, if ever, moves unless the camel stops in its circling, and even then its flight is so slow, as to make it almost impossible even for an ordinary shot to miss.

"As a game bird, the Oobara is perhaps one of the greatest delicacies that can be put upon the table, while its feathers are invaluable to the fishermen for salmon flies; and there is a little tuft of feathers just under the point of the shoulder which is greatly prized by the fair sex as an ornament for hats.

"All about Kurrachee is a very favourite country for Oobara, but, as may be imagined, anywhere within a radius of eight or ten miles they do not get

much rest, and, in order to make a really good bag, it is now necessary to go beyond that distance. The nearest good spot I know of, where a day's sport can be had without finding another person stalking over the same plain, is about twenty-five miles by rail." At Mayting and Jempeer stations, on the S. P. and D. line, this Bustard is numerous, and it is not uncommon to see a bag from these places of from 10 to 12 a day. The flesh of the Houbara is excellent eating. At the time of year it is found, it is extremely fat and tender, and hence skins are difficult to preserve, especially of the part on the rump, which is very thin.

### Gen. **Sypheotides**.—*Lesson.*

Bill broad at base and ridged above; nostrils elongate; more than half of tibia bare.

**125. Sypheotides bengalensis** (*Gmel.*), *Jerd.*, *B. Ind.* iii. p. 616; *Hume*, *Nests and Eggs Ind. B.* p. 559; *id. and Marsh.*, *Game Birds* i. p. 4 pl.; *Murray*, *Avif. Brit. Ind.* ii. p. 577, No. 1248. Otis deliciosa (*Gray*), *Hardw.*, *Ill. Ind. Zool.* i. pls. 61 and 62. Otis himalayanus, *Gould*, *Cent. Him. B.*, pls. 73, 74, 75.—The Bengal Florikin.

In breeding dress the male has the whole head, which is fully crested, neck, breast, and lower parts with the thigh coverts glossy black; the breast feathers elongated, and those of the neck in front also elongated; back, scapulars, tertiaries, rump and upper tail coverts rich olive buff, closely and minutely mottled with black zigzag markings, and a black dash in the centre of each feather; shoulders, wing coverts and quills white, the tips, shafts and outer edges of the first three primaries black; tail black, minutely mottled with buff and with a broad white tip. Bill dusky above, yellowish beneath; irides brown; legs pale dirty yellowish. (*Jerd.*)

*Length.*—24 to 27 inches; wing 14; tail 7; tarsus 6; bill at front 1·25. The female has the whole upper plumage pale fulvous with black and brown mottlings, barrings and vermiculations; ear coverts whitish.

*Hab.*—Throughout Lower Bengal, parts of the Punjab, N.-W. Provinces, Oudh, Dacca, Hill Tipperah, Sylhet, Assam and northward to the foot of the Himalayas. Breeds in Sikkim and Nepaul, from May to July. Eggs two in number, variable in shades of colour—pink, brown and stone colour, blotched and freckled all over with dark brown. Both this and the next species, *S. auritus*, are extremely wary, and, like the Houbara, very difficult to flush after the sun is well up, except in those parts of Bengal and the Central Provinces where they abound. The cock and hen birds are seldom flushed together, and my experience is that the former arrive first and in greater numbers than the latter. For the table both species are highly esteemed, and as Jerdon says, considered by some the most delicious game in the country. The flesh is brown, juicy, and of a very high flavour.

**126. Sypheotides auritus** (*Lath.*), *Jard. and Selby, Ill. Orn.* pls. 49, 92; *P. C.* 533; *Jerd., B. Ind.* iii. p. 619, No. 839; *Hume, Nests and Eggs Ind. B.* p. 561; *id. and Marsh., Game Birds* i. p. 5, pl.; *Murray, Hdbk., Zool., &c., Sind,* p. 207; *Str. F.* vol. iv. p. 10; *id., Vert. Zool. Sind,* p. 221; *id., Avif. Brit. Ind.* ii. p. 578, No. 1249. (*Likh,* Sind.)—The Lesser Floriken.

*Male.*—Head, neck, breast, ear tufts and entire lower parts black, paler on the vent and under tail coverts; chin white, a few of the elongated feathers under the chin white mesially; lower part of hind neck and large wing patch white; back, scapulars and upper tail coverts fulvous, mottled with buff and dark brown; tail brighter buff, with mottlings and three distinct bands, the last subterminal; first three or four primaries dark or dusky brown, the rest broadly barred with rufous or bright buff, the long narrow tips mottled; ear tufts three on each side, the shafts of the feathers bare for nearly three-fourths their length from their base.

The *female* is pure buff throughout, clouded and barred with deep brown; lower part of the body almost white; chin and throat white; bill pale yellow, the ridge and tip dusky brown; irides yellow.

*Length.*—17 to 19 inches; wing 7 to 7·8; tail 4 to 4·5. *Female* slightly larger.

*Hab.*—Throughout India, from the base of the Himalayas to the southernmost districts, not in Ceylon. It is found in Sind, Punjab, N.-W. Provinces, Oudh, Bengal, Central and Southern India, Kutch, Kattiawar, Rajputana, Concan and the Deccan during September and October. The majority however breed from July to September. Eggs, 4—5 in number, greenish of various shades in colour, everywhere pitted with minute pores, but smooth and glossy. In Central and Western India it is most abundant during the monsoon and during winter in Southern India. In Bengal they are found during the hot weather. Along the Malabar Coast, this Floriken occurs, but very sparingly. It feeds in the early morning, when it may be easily flushed, from the long grass or cotton and lentil fields which it affects. Like the flesh of the Houbara and Bengal Floriken, its flesh is esteemed very delicious and flavoursome. In Sind it occurs only in the vicinity of Kurrachee during August and September, chiefly at Mulleer, affecting the high grass. It breeds in the Deccan. In Sind a single egg was found on the Hubb plains by Mr. F. C. Constable.

## Family, CURSORIDÆ,—Courier Plovers.

Tarsi long, slender; bill slender, arched beyond the nostrils, which are in a short triangular groove; wings long and pointed; tail short of 12 feathers; toes three; no hind toe.

Gen. **Cursorius**.—*Lath.*

Bill moderately long; tarsi long and slender, scutellated; 1st and 2nd quills longest; tail short.

**127. Cursorius coromandelicus**, *Gmel., Syst. Nat.* i. p. 781; *Bodd., Pl. Enl.* 892; *Gould, B. As.* pl. 37; *Jerdon, B. Ind.* iii. p. 626, No. 840; *Hume, Str. F.* iv. p. 19; *id., Nests and Eggs Ind. B.* iii. p. 564; *Murray, Hdbk., Zool., &c., Sind*, p. 207; *id., Vert. Zool. Sind.* p. 221; *id., Avif. Brit. Ind.* ii. p. 579, No 1250.—THE INDIAN COURIER PLOVER.

Forehead and top of head bright chestnut, a small patch of black on the nape; supercilium white, extending to and meeting behind the nape; a black streak from the base of the nostril and through the eye, also extending and meeting behind; chin and throat white or pale buffy white; neck all round pale ferruginous, darkening into deep ferruginous on the breast and upper abdomen; a dark patch in the middle of the abdomen; primaries and their coverts black; under tail coverts white; back, scapulars and wing coverts earthy brown; upper tail coverts the same; tail with the outer feathers on each side white, with a black edge subterminally on the inner web; rest, except the middle tail feathers, ashy brown at base, with a subterminal dark band and a white tip; bill black; irides brown; legs creamy white.

*Length.*—9 to 10 inches; wings 6; tail 2·37; tarsus 2·25.

*Hab.*—Sind, Punjab, N.-W. Provinces, Oudh, Bengal, Beloochistan, N. Guzerat, Rajputana, Kutch, Kattiawar, Concan and Deccan, also Southern India, affecting open grassy plains, feeding on grass seeds, insects, &c. They are extremely shy, and run with great speed, now and again stopping dead to look back, and when pressed do not fly far. Breeds from March to July, under some tuft of grass or bush, laying 3—4 eggs of a cream or bright buff colour with patches, spots, blotches and smears of pale inky grey either all over or on only some portion of the egg; the markings above this are narrow scratches and streaks of blackish brown. There are but few sportsmen who consider the Courier Plovers worth shooting for their flesh. The fact is, the species are not so numerous at any one time and place to make a large bag, but all who would do so may try a couple of brace done up in the most simple way, and it would be found that the flesh is quite equal to that of any partridge, in fact much richer and as tender as a chicken, while in flavour it may be said to be as good as any of the Florikens.

**128. Cursorius gallicus**, *Gmel., Syst. Nat.* i. p. 784; *Naum., vogt.* t. 171; *Gould, B. Eur.* pl. 266; *Jerd., B. Ind. App.* vol. iii. p. 874; *Hume, Str. F.* i. p. 228; iv. 11; *id., Nests and Eggs Ind. B.* p. 566; *Murray, Hdbk. Zool., &c., Sind*, p. 207; *id., Vert. Zool., Sind*, p. 221; *id., Avif. Brit. Ind.* ii. p. 562, No. 1251.—THE CREAM-COLOURED COURIER PLOVER.

Forehead and crown rufescent or pale orange buff, shading on to the back of head into grey or ashy grey, below which, on the nape, is a small black patch; supercilium white, extending to and meeting behind the nape, also a black streak from behind the eye; lores pale white; chin and throat pale white breast isabelline brown, fading on the abdomen to albescent, and white on the under tail coverts; back, scapulars, tertials and wing coverts warm rufous buff, brighter on the tail, the outer feathers of which on each side have a subterminal black band on the inner web only; the others on both webs, and all, except the central tail feathers, broadly tipped white; primaries black; secondaries with their outer webs concolorous with the back, the inner web, and subterminally on both webs also black, the edges of the tips white.

*Length.*—10·5 to 11 inches; wing 6·5 to 7; bill black, 1·06 in length in front; irides brown.

*Hab.*—Sind, Punjab, N.-W. Provinces, Oudh, Beloochistan, Persia, Afghanistan, Kutch, Guzerat and Rajputana. Breeds in similar situations as *C. coromandelicus* from May to July. Eggs broad ovals, slightly compressed towards one end. In colour they are not unlike those of *C. coromandelicus*. In size they vary from 1·1 to 1·28 in length and from 0·9 to 1·04 in breadth. Extremely common on bare or open grassy plains.

## **Sub-Family**, CHARADRINÆ.—Plovers.

Bill slender, straight, flattened at the base, compressed and grooved; wings long and pointed; tarsi moderate, 1st quill usually longest; hind toe small or wanting.

In India, all the members of the *Charadrinæ* sub-family are numerous, and occur generally associated together in moderately-sized flocks during winter, either near the sea coast, on the banks of large rivers, on mud flats, open plains, edges of rivers and lakes, or on grassy downs and ploughed fields, Some remain and breed in the country, as some of the *Ægialitidæ*, and all, in smaller or greater numbers, are snared and brought in to the various town and mofussil markets and sold as snipe. During the season they are much sought after by all classes for their flesh, which is reckoned equally as good as some of the *Scolopacidæ*.

### Gen. **Squatarola**.—*Cuv.*

Nasal groove short; bill bulged at the tip; a very minute clawed hind toe present.

**129. Squatarola helvetica** (*Linn.*), *Jerd.*, *B. Ind.* iii. p. 635, No. 144; *Dresser*, *B. Eur.* vii. p. 455; *Salvad.*, *Ucc. Born.* p. 313; *Blyth*, *B. Burm.* p. 153; *Scully*, *Str. F.* iv. p. 184; *Armstrong*, *Str. F.* iv. p. 338; *David et Oust. Ois Chine*, p. 424; *Hume and Dav.*, *Str. F.* vi. p. 455; *Hume*,

*Str. F.* viii. p. 112; *Legge, B. Ceylon*, p. 929; *Oates, Str. F.* x. p. 237; *id., Br. Burm.* ii. p. 365; *Murray, Vert. Zool., Sind*, p. 224; *id., Avif. Brit. Ind.* ii. p. 583, No. 1256. Tringa helvetica, *Linn., Syst. Nat.* 1, p. 250.—The Grey Plover.

*Winter Plumage.*—Forehead, lores, supercilia, chin, abdomen and entire lower surface, including the under tail coverts, white; foreneck, sides of the breast and flanks white, the feathers with sub-triangular or sub-quadrate brownish markings; feathers below the wing from the axilla long and black; head dusky brown, the feathers with narrow tips; rest of the upper plumage dusky brown, the feathers edged and tipped with white or greyish white; tail basally white, with a slightly rufescent tinge terminally, and with 6—7 transverse brown bands or bars. In summer the entire lower surface from the chin, except the vent and under tail coverts, is black, also the lores and sides of the neck; forehead, supercilia and sides of the breast white; back and rump, scapulars and wing coverts black, broadly tipped with brown and white; top of head and nape grey brown, the feathers tipped with white; tail white, banded dark brown; primaries dark brown, their inner webs white.

*Length.*—11 to 12 inches; wing 8; tail 3·25; bill at front 1·25, black; irides dusky; feet dark brown, or dusky brown; weight 7·5 oz.

*Hab.*—Sind, Beloochistan Coast, Kutch, Kattiawar, and nearly all over the Indian Coast; also Burmah. Occurs in flocks along the Sind sea-coast during winter, especially on the mud flats. In the Kurrachee harbour it is numerous on the large island-like flats, especially about Baba Island, associated with the larger and smaller Kentish Plovers.

## Gen. **Charadrius**.—*Gmel.*

Bill short and strong; first quill longest; hind toe wanting; other characters as in the sub-family.

**130. Charadrius fulvus**, *Gm., Syst. Nat.* 1, p. 687; *Dresser, B. Eur.* vii. p. 443, pl.; *Hume, Str. F.* i. p. 228; ii. p. 287; *id., Nests and Eggs* p. 570; *id., Str. F.* iii. p. 179; *Blyth, B. Burm.* p. 153; *Salvad., Ucc. Born.* p. 313; *David et Oust. Ois Chine*, p. 424; *Hume and Dav., Str. F.* vi. p. 455; *Hume, Str. F.* vii. p. 482; *Scully, Str. F.* viii. p. 350; *Legge, B. Ceylon*, p. 934; *Oates, B. Br. Burm.* ii. p. 364; *Murray, Avif. Brit. Ind.* ii. p. 584, No. 1257. Charadrius longipes (*Temm.*), *Bonap., Rev. Crit.*, 1850, p. 180; *Jerd., B. Ind.* ii. p. 636, No. 845; *Murray, Vert. Zool., Sind*, p. 224.—The Eastern Golden Plover.

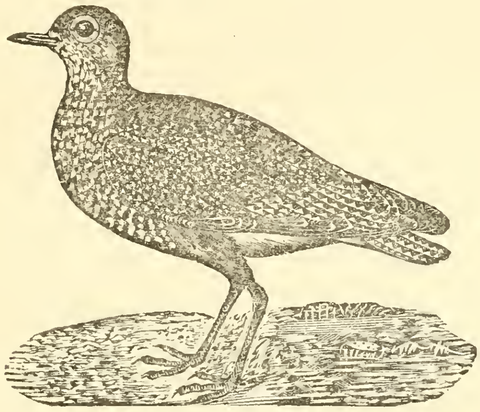
*Winter Plumage.*—Head dark brown, the tips of the feathers yellow; forehead white or yellowish white, as are also the lores, supercilia, chin, foreneck and the under tail coverts; back, scapulars, rump, upper tail coverts and wing coverts dusky brown, the edges of the feathers with triangular or sub-triangular yellow spots; tail lighter in colour, the feathers also similarly edged with

yellow spots; the neck behind, on the sides, and in front buffy, with a dusky tinge and yellow edgings and spots to the feathers; flanks pale brown, spotted with soiled white. In the summer plumage, the upper plumage is much darker, nearly black, the yellow spots less numerous and smaller, the forehead is white, and the cheeks, throat, neck, and entire under parts are black; primaries black, shafts of the first three white; secondaries tipped with white; also the median wing coverts; tail brownish with transverse bands of black.

*Length.*—10 to 10·5 inches; wing 6·75; tail 2·75; bill at front 0·87; tarsus 1·75; bill dusky at base, black at the tip; irides deep brown.

*Hab.*—Sind, Punjab, Kutch, Kattiawar, Deccan and India generally, also Burmah, in open plains or in the vicinity of rivers and ploughed fields.

**131. Charadrius pluvialis**, *Linn.*, *Syst. Nat.* i. p. 251; *Dresser*, *B. Eur.* vii. p. 460; *Hume*, *Str. F.* v. p. 247; *id.*, vii. pp. 186; *Murray*, *Vert. Zool.*, *Sind*, p. 225; *Murray*, *Avif. Brit. Ind.* ii. p. 584, No. 1258.—The European Golden Plover.



Charadrius pluvialis.

*Winter Plumage.*—Forehead yellowish white, streaked and spotted with pale brown and grey; head on the sides greyish brown; the crown, back of neck and nape greyish brown with purple reflections and yellow angular spots on the edges and tips of the feathers; chin and throat whitish; breast dusky greyish white, tinged yellow, and spotted with darker grey; axillary plumes white; greater and lesser wing coverts greyish black, the spots paler and the feathers of the greater coverts tipped with white; the tail is deep brown, and barred obliquely with yellowish or yellowish white; upper tail coverts like the back. In summer it undergoes the same change as *longipes*, but the yellow becomes brighter, and the lower parts intense black, except the sides of the neck, breast and body, which are yellowish white, with dark and dusky

patches or marblings; primaries and secondaries dusky brown, the shafts of the first five white anteriorly.

*Length.*—10·5 to 11·5 inches; wing 7·5; bill black; irides deep brown.

*Hab.*—Sind, Punjab, and Beloochistan.

This species was first entered in the Sind list by Mr. Hume with a query. Since then all the specimens obtained by myself and others were *longipes.* In my *Handbook* mention was made that *pluvialis* would be found to occur, Mr. Blanford having recorded it from only 200 miles further west at Gwadur. Mr. Brooks, *Stray Feathers*, viii., 489, has since then recorded it from near Sehwan. Mr. Hume, in vol. i., p. 229 of *Stray Feathers*, points out the difference between *fulvus* = *longipes* and *virginicus* from America. He says, "*pluvialis* is at once distinguished by its pure white axillary plumes, which in *fulvus* are brownish or smoke grey. *Fulvus* and *virginicus* differ chiefly in their relative proportions, the former being always smaller." The following are the dimensions of the three given by Harting:—

| | Bill. | Wing. | Tarsus. |
|---|---|---|---|
| *C. virginicus* | 1·0 | 7 to 7·4 | 1·6 |
| *C. fulvus* | 0·8 to 0·9 | 6·4 to 6·6 | 1·5 |
| *C. pluvialis* | 0·9 | 7·5. | 1·4 |

## Gen. Ægialitis.—*Boie.*

Bill slender, grooved on upper mandible for two-thirds its length; front of bill raised; upper mandible slightly the longer; 1st quill longest. All the Sand Plovers are more or less gregarious in their habits, and feed either on ploughed lands, meadows, edges of marshes and ponds, sandbanks, mud lagoons and banks of rivers and tanks. They run with some speed, making a dead stop now and again to pick up a worm, mollusc, small crustacea or other insects on which they feed. Nearly all are migratory. Eggs, generally 4 in number, are of a stone yellow or greenish colour, richly blotched.

**132. Ægialitis Geoffroyi,** *Wagl., Syst. Av. Charadrius sp.* 19; *Jerd., B. Ind.* iii. p. 638; *Harting, Ibis,* 1870, p. 378, pl. xi.; *Salvad., Ucc. Born.* p. 318; *David et Oust. Ois. Chine.* p. 426; *Dresser, B. Eur.* vii. p. 475, pl.; *Hume and Dav., Str. F.* vi. p. 455; *Hume, Str. F.* viii. pp 112, 200; *Legge, B. Ceylon,* p. 939; *Oates, B. Br. Burm.* ii. p. 366; *Kelham, Ibis,* 1882, p. 9; *Murray, Vert. Zool., Sind,* p. 226; *id., Avif. Brit. Ind.* i. p. 585, No. 1259. Cirrepidesmus Geoffroyi, *Hume, Str. F.* i. p. 229; ii. p. 288; *id., Nests and Eggs Ind. B.* p. 571.—The Large Sand Plover.

In winter plumage, head, neck, nape, back, sides of the breast, scapulars and wing coverts greyish brown; a streak from the base of the mandible under the eye to the ear coverts slightly darker; forehead, a streak above the eye, chin, throat, sides of the neck and rest of the lower parts white; upper

tail coverts dull white or pale grey brown ; primaries and their coverts dark brown ; outer web near the tips and the tips of the secondaries white ; longest tertial reaches to between the 3rd and 4th primaries. In summer plumage, the forehead, lores, ear coverts and beneath the eye are black ; on each side of the forehead is a white spot ; the neck and breast rufous ; the throat and chin white ; head tinged with rufescent, and the upper parts margined with the same ; the shafts of the feathers of the back, scapulars and wing coverts in both stages are dark ; primaries dark brown ; the outer webs of the inner ones white, also the tips of the secondaries.

*Length.*—8 to 9·25 inches ; expanse 17 to 19 inches ; wing 5·4 to 5·98 ; tail 2 ; bill at front 1 ; tarsus 1·5 ; legs greenish ; bill black ; irides brown.

*Hab.*—Sind, Beloochistan Coast, Persian Gulf, Bengal, Rajputana, Kutch, Kattiawar and India generally during winter ; also Burmah. Extremely common along the sea coast and at the mouths of the Indus in large flocks, where they may be seen running along the sandbanks for small crustacea, insects, molluscs, &c.

*Eudromius veredus*, Gould, and *Ægialitis placida*, G. R. Gray, also *Æ. nigrifrons*, Cuv., are species entered in the Avifauna of India of which there is no precise information or corroboration of the fact of their having been found in India. I have therefore not included them in this work.

**133. Ægialitis mongolica** (*Pall.*), *Harting, Ibis*, 1870, p. 384; *Salvad., Ucc. Born.* p. 316; *Hume, Str. F.* iii. p. 170; *Blyth, B. Burm.* p. 153 ; *Armstrong, Str. F.* iv. p. 339. *Legge, B. Ceylon*, p. 942 ; *Kelham, Ibis*, 1882, p. 10. Charadrius mongolus, *Pall., Reis. Russ. Reichs.* iii. p. 700. Charadrius mongolicus, *Pall., Zoogr. Rosso-Asiat.* ii. p. 136. Charadrius pyrrhothorax, *Temm. in Gould, B. Eur.* pl. 299. Ægialitis pyrrhothorax, *Jerd., B. Ind.* iii. p. 639, No. 847 ; *Murray, Hdbk., Zool., &c., Sind*, p. 209 ; *id., Vert. Zool., Sind*, p. 226 ; *id., Avif. Brit. Ind.* ii. p. 586, No. 1260. Cirrepidesmus mongolicus, *Hume, Str. F.* i. p. 230 ; ii. p. 289 ; *id., Nests and Eggs Ind. B.* p. 571. Ægialitis mongolus, *Hume and Dav., Str. F.* vi. p. 455 ; *Oates, Str. F.* x. p. 237.—The Lesser Sand Plover.

In both winter and summer plumage similar to *Æ. Geoffroyi*, but smaller in all measurements.

*Length.*—7 to 7·25 inches ; expanse 15 inches ; wing 5 inches ; tail 1·87 ; bill at front 0·75 ; tarsus 1·25. The tertials reach to between the first and second primaries ; bill black ; irides brown ; legs dusky plumbeous.

*Hab.*—Sind, Beloochistan Coast, Persian Gulf, Afghanistan, and India generally, also Burmah, along the sea shore and banks of rivers, not far inland.

**134. Ægialitis cantiana** (*Lath.*), *Jerd., B. Ind.* iii. p. 647, No. 848 ; *Armstrong, Str. F.* iv. p. 340 ; *Dresser, B. Eur.* vii. p. 483, pl. ; *Hume and Dav., Str. F.* vi. p. 456 ; *Legge, B. Ceylon*, p. 947 ; *Oates, Str. F.* x.

p. 237; *id.*, *B. Br. Burm.* ii. p. 368; *Murray, Vert. Zool., Sind*, p. 226; *id.*, *Avif. Brit. Ind.* ii. p. 587, No. 1261. Charadrius cantianus, *Lath.*, *Ind. Orn. Suppl.* pl. lxvi. Ægialophilus cantianus, *Hume, Str. F.* i. p. 230; *id.*, *Nests and Eggs*, p. 571.—The KENTISH PLOVER.

*Male in Winter Plumage.*—Forehead, streak over the eye, extending to the ear coverts, chin, throat, ring round the neck, breast, abdomen and under tail coverts white; outer tail feathers on each side also white, with a subterminal dusky spot on the inner web; crown, nape, neck behind, a streak from the base of the bill under the eye, cheeks, back, scapulars, sides of breast and tertials earthy or greyish brown, the feathers with darker shafts; in some (February specimens) the feathers are tinged with rufous, and those on the fore part of the crown, very slightly (absent in most) white tipped; tail earthy or grey brown, darker subterminally, and all, except the central feathers, tipped pale fulvous or white; primaries dusky-brown, 4th, 5th and 6th with a patch of white on their outer webs; secondaries edged and tipped terminally with white; edge of the wing and under wing coverts white.

In nuptial plumage, the white of the forehead extends broadly over the eye and beyond it, behind which on the forecrown is a patch of black followed by a reddish or reddish brown patch, tinged with grey. The streak from the base of the bill through the eye to the ear coverts is black, and there is a large patch of black on each side of the breast; back, scapulars and tertials greyish brown; the 1st primary is the longest; primaries dusky brown; wing coverts grey brown, the greater series tipped with white; secondaries white at their base and tips; under wing coverts, chin, throat and under parts white; the tail is like the back, the middle feathers longest and dusky brown near the tip, the outer ones on each side white.

*Length.*—6·75 inches; wing 4·3; tail 2; bill at front ·75; bill black; irides brown; feet dusky greenish.

*Hab.*—Sind, Beloochistan, Persia, Afghanistan, Punjab, N.-W. Provinces, Oudh, Bengal, Rajputana, Kutch, Guzerat, South India and Ceylon. Abundant along the coast about the Delta of the Irrawaddy, and also at various points in Tenasserim. It is also recorded from Arracan. In Ceylon, Major Legge found it breeding in June and July on the banks of salt lagoons, in the south-east portion of the Island.

**135. Ægialitis dubia** (*Scop.*), *Salvad., Ucc. Born.* p. 316; *Blyth, B. Burm.* p. 153; *David et Oust. Ois. Chine*, p. 429; *Anderson, Yunnan Exped.* p. 676; *Hume, Str. F.* vii. p. 227 (note); *Oates, Str. F.* x. p. 237; *id.*, *B. Br. Burm.* ii. p. 370. Charadrius dubius, *Scop.*, *Del. Flor. et Faun. Insub.* ii. p. 93. Charadrius curonicus, *Gm.*, *Syst. Nat.* i. p. 692. Charadrius phillipinus, *Lath.*, *Ind. Orn.* ii. p. 745. Charadrius fluviatilis, *Bechst.*, *Gemeinn Naturg. Deutschl.* iv. p. 422. Ægialitis phillipensis (*Scop.*), *apud. Jerd.*, *B. Ind.* ii. p. 640, No. 849; *Murray, Vert. Zool., Sind*, p. 227;

*id.*, *Avif. Brit. Ind.* ii. p. 588, No. 1262. Ægialitis fluviatilis, *Hume, Str. F.* i. p 230; ii. p. 289; *id.*, *Nests and Eggs Ind. B.* p. 572. Ægialitis curonica, *Wald. in Blyth's B. Burm.* p. 154; *Dresser, B. Eur.* vii. p. 491; *Legge, B. Ceylon*, p. 952—The LESSER RINGED PLOVER.

A narrow streak above the base of the bill continued behind, under, and through the eye to the ear coverts black; crown of head and ring round the neck black; a patch of white on the forehead above the black frontal streak; chin, throat, and under parts from below the black collar, including the under coverts, white; nape and upper plumage cinereous or greyish brown; primaries dusky brown; tail with the middle feathers paler than the lateral ones, except the outermost on each side, which are white, with a dusky spot on the inner web; under wing coverts white.

*Length.*—7 to 7·25 inches; wing 4·5; tail 2·5; bill at front 0·56; bill black; irides brown; legs yellowish.

*Hab.*—Sind, Beloochistan, Persia, Aghanistan, E. Turkestan, Nepaul, Cashmere, and throughout India, also throughout Burmah. Extremely common in rice fields and along the banks of the Indus. Breeds in the Deccan and Central Provinces during April and May. Eggs, three in number, broad ovals, elongated and pointed towards one end; of a fawn, drab or buffy stone colour, speckled and spotted with hieroglyphic-like lines and figures of brownish purple, blackish brown or black. Size 1·1 to 1·23 × 0·8 to 0·87.

**136. Ægialitis Jerdoni,** *Legge, P. Z. S.* 1880, p. 39; *id.*, *Birds, Ceylon*, p. 956. Ægialitis minutus (*Pall.*), *apud. Jerd.*, *B. Ind.* ii. p. 641; *Legge, Str. F.* iii., p. 372; *Hume and Davison, Str. F.* vi. p. 456; *Hume, Str. F.* viii. pp. 112, 199; *Oates, Str. F.* x p. 238; *id.*, *B. Br. Burmah*, ii. p. 371; *Murray, Avif. Brit. Ind.* ii, p. 588, No. 1263. Ægialitis phillipinus (*Lath.*), *apud. Hume, Str. F.* p. 179.—The LITTLE INDIAN RINGED PLOVER.

Similar to *Æ. dubia*, from which it differs in being smaller, in having the edges of the eyelids swollen and protuberant, and in having the basal half of the lower mandible yellow. Another point of difference, according to Mr. Hume, is that in summer the legs of *Æ. Jerdoni* do not become yellow as in *Æ. dubia*.

*Length.*—6 inches; tail 2·2; wing 4·1; tarsus 9; bill from gape 5·5. The female is rather larger, approaching in size the male of *Æ. dubia*.

The Little Indian Ringed Plover is generally distributed over Burmah, but is nowhere very abundant. Oates procured it near Thayetmyo and also in Southern Pegu, along the banks of the canal. Capt. Wardlaw-Ramsay got it at Tounghoo, and Mr. Davison observed it in Tenasserim about the latitude of Moulmein. It occurs in suitable localities over the whole of India and Ceylon, the Indo-Burmese Countries, and Cochin-China, where Dr. Tiraud procured many specimens near Saigon. Oates says it is probably a constant resi-

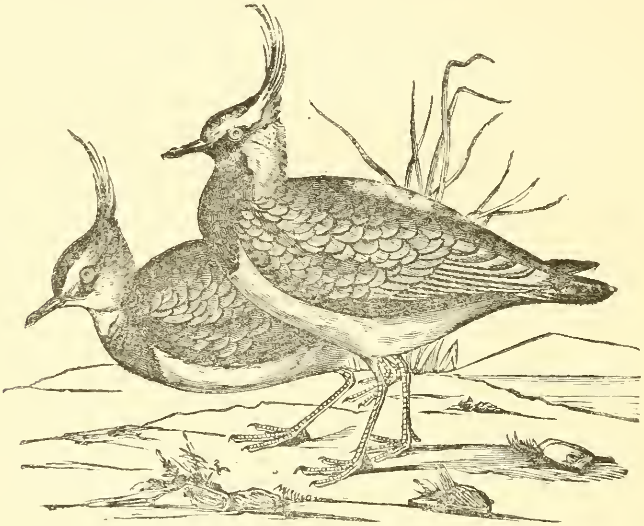
dent in Burmah, notwithstanding the fact that all his specimens were procured in the winter season. In the rains, when sandbanks are submerged, its area of distribution must become very restricted, and it is likely at this time of the year to escape observation. Major Legge found it breeding in Ceylon.

## **Sub-Family**, VANELLINÆ.—Lapwings.

Bill rather compressed, straight, convex at the tip; nostril in a long lateral groove; wings pointed and long; tail broad; hind toe short. Generally very active and lively birds. Nearly all winter visitants in India. Feed on worms, slugs, molluscs, &c., either along the sea shore, or river banks, or the edges of tanks and marshes; also in ploughed fields. In parts of England the Vanellinæ are considered by some good for food and their eggs a delicacy. In India, however, this is not the case to any great extent, though some persons think them not amiss at any time. After October they are very fat and tender, and for the table are said to be undistinguishable from the Plovers.

### Gen. **Vanellus**.—*Linn.*

Bill straight; 2nd and 3rd quills longest; shoulder of wing with a small (not prominent) tubercle.



**137. Vanellus cristatus**, *Meyer, P. E.* 242; *Gould., B. Eur.* pl. 291; *Jerd., B. Ind.* iii. p. 643; *Hume, Nests and Eggs Ind. B.* p. 573; *Str. F.* i. 231; *Murray, Hdbk., Zool., &c., Sind*, p. 210; *id., Vert. Zool. Sind*, p. 228; *id., Avif. Brit. Ind.* ii. p. 589, No. 1264.—The Crested Lapwing or Peewit.

Entire head, crest, chin, a line below the eye, breast and foreneck black, glossed with greenish; lores, supercilia and behind the eye, also sides and

back of the neck, and from the termination of the black breast to the belly, white; the sides of the head in some immature specimens speckled with brown or dusky; upper tail coverts pale reddish chestnut; under tail coverts slightly paler; back and scapulars olive green, glossed with coppery and purple; golden green on the lower back and rump; primaries black, the first three broadly terminated with greyish white; 1st quill shortest, third longer than the second or nearly equal; greater and lesser wing coverts like the back; tail white basally, and broadly black terminally, with narrow white tips to all the feathers; the outermost feather entirely white, except a dusky spot subterminally on the inner web.

*Length.*—12 inches; wing 9; tail 4; tarsus 2; bill black; irides hazel brown; legs orange brown. In winter plumage the chin and throat are white, and there is much brown specklings on the sides of the face and nape. The female is like the male in winter plumage, and throughout of a duller tint.

*Hab.*—Sind, Punjab, N.-W. Provinces, Beloochistan, Persia, Afghanistan, and E. Turkistan, also Nepaul and Cashmere. It is said to breed in Yarkand. In Sind it is a winter visitant, and is found in open places, marshy ground, and the banks of canals. In England, the Vanellinæ are considered by some good for food, and their eggs a delicacy. In India, however, it is not the case, though some persons think them not amiss at any time. After October they are very fat and tender, and for the table are said to be undistinguishable from the Plovers.

## Gen. **Chettusia**.—*Bp.*

Head not crested; plumage ashy; otherwise as in *Vanellus*.

**138. Chettusia gregaria**, *Pallas, Zoogr.* ii. t. 56; *Gould, B. Eur.* pl. 292; *Jerd., Birds Ind.* iii. p. 644, No. 852; *Str. F.* i. 231; iv. 13; *Murray, Hdbk., Zool., &c., Sind*, p. 210; *id., Vert. Zool. Sind*, p. 229; *id., Avif. Brit. Ind.* ii. p. 590, No. 1265.—The Black-sided Lapwing.

Forehead, supercilium extending to the occiput, lower belly, vent and under tail coverts white; top of head, a narrow band from the base of the bill through the eye, and the middle of the abdomen black; back of neck, back, and scapulars olivaceous brown, tinged greyish; sides of head and neck pale rufous, passing to greyish or brownish on the breast; primaries black; secondaries white; tail and upper tail coverts white, with a broad subterminal black band, tipped with white; outermost feathers white.

*Length.*—12·5 to 13 inches; wing 8·5; tail 3·5; tarsus 2·3; bill at front 1·2. In the young the black abdominal patch is wanting. The females are much duller than the males in colour.

*Hab.*—Sind, Beloochistan, Persia, Afghanistan, Punjab, N.-W. Provinces, Oudh, the Concan, Deccan, Kutch, Kattiawar, Rajputana and Central India. Frequents grassy plains in parties of from five to twenty. Its flesh is said to be very delicate.

**139. Chettusia leucura** (*Licht.*), *Jerd.*, *B. Ind.* iii. p. 646, No. 853. Chettusia flavipes, *Savigny*, *desc. d'l'Egypt. Zool.* p. 6, fig. 2. Chettusia Villotæi, *Audoin.*, *Hume*, *Str. F.* 1. p. 232; *id.*, iv. p. 13; *Murray*, *Vert. Zool.*, *Sind.* p. 229; *id*, *Avif. Brit. Ind.* ii. p. 591, No. 1266.—The White-tailed Lapwing.

Head and neck brown, very pale, almost fulvous on the forehead; a small whitish patch behind the eye; chin and throat white; back and scapulars brown, glossed with reddish purple; upper tail coverts and tail white; breast pale greyish brown, bluish ashy on the lower part; lower abdomen and under tail coverts white, the former tinged of a roseate hue; primaries black; secondaries white, broadly tipped on their outer webs with black; median and greater wing coverts basally ashy, broadly edged subterminally on the outer web with black and tipped with white.

*Length.*—11 to 11·5 inches; wing 7; tail 2·75; bill at front 1; bill black; irides brown red; legs bright yellow.

*Hab.*—Sind, Punjab, N.-W. Provinces, Oudh, Beloochistan, Afghanistan, Persia, Kutch, Kattiawar, and North Guzerat, also in Central India, and probably the Deccan; common in the vicinity of jheels, tanks, &c. Like the last the flesh is considered good eating, after October, when they are then extremely fat.

**140. Chettusia cinerea** (*Blyth*), *Hume*, *Str. F.* iii. p. 180; *Blyth*, *B. Burm.* p. 152; *David et Oust Ois. Chine*, p. 422; *Hume and Dav.*, *Str. F.* vi. p. 456; *Cripps*, *Str. F.* vii. p. 300; *Hume*, *Str. F.* viii. p. 112; *Oates*, *Str. F.* x. p. 238; *id.*, *B. Br. Burm.* ii. p. 372; *Murray*, *Avif. Brit. Ind.* ii. p. 591, No. 1267. Pluvianus cinereus, *Blyth*, *J. A. S. B.* 1. p. 587. Lobivanellus inornatus, *Temm. et Schleg*, *Faun. Jap. Aves*, p. 106, pl. 63. Chettusia inornata, *Jerd.*, *B. Ind.* iii. p. 646.—The Grey-headed Lapwing.

Head and neck all round grey; back, rump, lesser and median wing coverts and scapulars, also the tertiaries, greyish brown, with a faint vinous tinge; upper tail coverts white; tail white, with a broad black band near the tip, diminishing in width towards the lateral feathers and absent on the outermost; primary coverts and primaries black; greater wing coverts and secondaries white; breast greyish brown, bounded below by a broad black band; rest of under surface white; edges of the eyelids, lappets and basal two-thirds of the bill deep yellow; terminal third of bill black; irides red; legs dull yellow.

*Length.*—14·5 inches; tail 4·5; wing 9·8; tarsus 3; bill from gape 1·6.

*Hab.*—Northern India, Punjab, N.-W. Provinces, Oudh, Kumaon; also British Burmah in Southern Pegu, Bassein, Tongoo, the low-lying parts of Northern Tenasserim and Bengal, affecting swamps and marshy ground. It is a winter visitant to these parts, leaving India during April.

## Sub-Family, ÆSACINÆ.—Stone Plovers.

Bill strong and thick; no hind toe; nostrils linear, in a groove near the base of the bill; gonys strongly angulated.

### Gen. Æsacus.

Bill long, sub-curved, the lower edge of the under mandible wide in the middle, then curving to a point.

**141. Æsacus recurvirostris** (*Cuv.*), *G R. Gray, M. G. B.* pl. 142; *Jerd., B. Ind.* iii. p. 652, No. 858; *Hume, Nests and Eggs Ind. B.* p. 579; *id., Str. F.* ii. p. 182; *Blyth, B. Burm.* p. 152; *Str. F.* vol. v. p. 121; *Hume, Str. F.* vi. p. 458; *Oates, Str. F.* vii. p. 50; *Hume, Str. F.* viii. p. 112; *Legge, B. Ceylon* p. 974; *Oates, B. Br. Burm.* ii. p. 357; *Murray, Hdbk., Zool., &c., Sind,* p. 211; *id., Vert. Zool. Sind.* p. 231; *Murray, Avif. Brit. Ind.* ii. p. 594, 1272. (*Karwanak* : *Chota Taloor*, Sind). —The Large Stone Plover.

Forehead and a broad line down the sides of the face white; a broad dark streak on each side from the base of the lower mandible; feathers round and behind the eye white, broadly bordered with dark brown; chin, throat, abdomen, and under tail coverts white; top of head, neck behind, back, scapulars and tertials pale brown, the feathers distinctly dark-shafted; neck in front white, in some specimens obtained in April greyish brown; the breast ashy, contrasting with the pure white of the rest of the under surface; primaries black, the first three quills with a patch of white on their terminal thirds, and the last three basally and at tip white, with a subterminal black band; lesser wing coverts dark brown; median and greater coverts pale greyish brown, the latter white tipped; secondaries dark brown, their inner webs white; tail pale brown at base, with a subterminal white band and a broad black tip, except the outermost feather, which is white at the base and more broadly tipped with black; bill black, greenish at the base; irides yellow; legs yellow.

*Length.*—20 inches; wing 10·5; tail 4·37; tarsus 3·5; bill at front 3, at gape 3·75.

*Hab.*—Nearly throughout India, along the sea coast and banks of large rivers. From the stomach of a specimen got in the Kurrachee harbour ten calling crabs (*Gelasimus annulipes*) were extracted. *Æ. magnirostris*, an Australian species, is said to have occurred in the Andaman Islands and probably also occurs along the Burmese sea coast. There is however no precise information. It is distinguished from this species by being a little larger, and by the colour of the *sixth primary being all white* with only a brown band on the outer web.

## Gen. Œdicnemus.—*Cuv.*

Bill longer than the head, straight and slightly depressed at the base; culmen raised near the point; mandible angulated beneath; nostrils in the middle of the bill in a longitudinal slit; toes three; tail graduated.

Œdicnemus crepitans.

**142. Œdicnemus crepitans,** *Temm., Man. d' Orn.* p. 348; *Jerd., B. Ind.* iii. p. 654; *Hume, Str. F.* i. p. 232; *id., Str. F.* iii. p. 182; *Blyth, B. Burm.* p. 152; *Oates, Str. F.* xi. p. 238; *Murray, Vert. Zool. Sind,* p. 232; *Murray, Avif. Brit. Ind.* ii. p. 596, No. 1273. Charadrius œdicnemus, *Linn, Syst. Nat.* i. p. 255. Charadrius scolopax, *S. G. Gmel., Reisse Russ.* iii. p. 87, pl. 16. Œdicnemus indicus, *Salvad., Ass. Soc. Ital. Sc. Nat.* viii. p. 380; *Hume, Nests and Eggs Ind. B.* p. 581. Œdicnemus scolopax, *Dresser, B. Eur.* vii. p. 401, pl.; *Legge, B. Ceylon,* p. 969; *Oates, B. Br. Burm.* ii. p. 356.—The Stone Plover or Bastard Floriken.

Lores white, with a few brown spots; chin and throat white; a distinct narrow moustachial stripe from the base of the lower mandible; head, neck, back, scapulars and upper tail coverts reddish ashy, each feather with a mesial dusky streak; breast the same as the back; belly white; under tail coverts reddish ashy; tail white basally, all the feathers except the middle ones tipped with black; thigh coverts white; primaries black, the first three quills with a patch of white at their terminal third, and the last three white basally and at tip with a subterminal dark band; edges of the greater wing coverts white, forming a wing band.

*Length.*—16 inches; wing 9; tail 4·5; bill at front 1·5; irides and orbits yellow; also the legs and feet.

*Hab.*—Throughout India, including Burmah, also Ceylon and Persia. Affects stony places, waste land, grassy plains, dry river beds and the sides of sloping banks; runs very swiftly, especially when first surprised, stops short now and again after the manner of *Cursorius isabellinus*, and squats close to the ground, depending for safety on the colour of its plumage, which is like that of the ground. Its flight is strong and steady, but it seldom uses its wings, except when hard pressed; usually turns out in the evening in quest of food, which consists chiefly of worms. The young are said to run from the nest within three hours of their birth. It is not uncommon to meet with parties of this bird in looking for Oobara (*H. Macqueenii*) among Grewia bushes, and perhaps from this circumstance and its lineated plumage it is called the "*chota* or small Taloor." It is, as Jerdon says, a favourite quarry for the Sparrow Hawk and the Besra. Its flesh is as much esteemed almost as that of the Houbara, being highly flavoured. Breeds in Sind from February to April. It makes no nest, the eggs being laid in a small depression in the ground, usually sheltered by a stone.

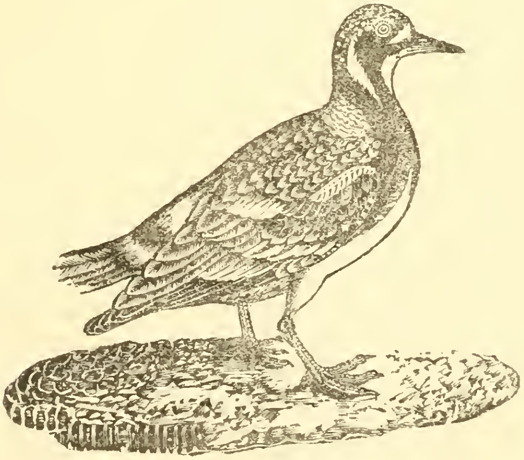
### **Family,** HÆMATOPODIDÆ, *Bp.*—Sea Plovers.

Feet with three toes, and a very small hind toe; bill long, strong, front half compressed, tip blunt; wing long and pointed.

### **Sub-Family,** STREPSILINÆ.—*Bp.*

Characters those of the Family; bill slightly curved upwards.

**143. Strepsilas interpres** (*Linn.*), *Jerd.*, *B. Ind.* ii. p. 656; *Salvad.*, *Ucc. Born.* p. 320; *Blyth*, *B. Burm.*, p. 154; *Dresser*, *B. Eur.* vii. p. 555, pl.; *Hume*, *Str. F.* iv. p. 464; *Murray*, *Vert. Zool.*, *Sind*, p. 233; *Legge*, *B. Ceylon*, p. 987; *Oates*, *Str. F.* x. p. 238; *id.*, *B. Br. Burm.* ii. p. 376; *Murray*, *Avif. Brit. Ind.* ii. p. 597, No. 1274. Cinclus interpres, *Hume*, *Str. F.* i. p. 233; ii. p. 292. Tringa interpres, *Linn.*, *Syst. Nat.* i. p. 248.—The Turnstone.



Strepsilas interpres.

In winter the crown and hinder part of the head are dusky, edged very narrowly with greyish brown; the lores pale brown, or in some specimens greyish brown; the chin and throat are white, also a patch on each side of the neck, bordered in front along the sides of the white throat patch with dusky or dark brown; upper back, scapulars, rump, breast and sides of the breast dusky or dark brown, according to season, edged with rusty or brownish red; some of the scapulars partly edged with white; tertials long, reaching beyond the fifth quill, edged and tipped with rufous or red brown; lesser wing coverts, like the upper back, white at the shoulder; the secondary or greater coverts tipped with white, forming a conspicuous wing bar; primaries and secondaries black, the inner webs of the former and tips of the latter white; back, lower surface of the body from below the breast, also the thigh and upper and lower tail coverts white; a patch of black on the rump; tail feathers white, with a subterminal black band, except the central ones, which are entirely black. In the summer or breeding plumage, the forehead, a band over the eye, lores and a patch behind the eye are white; the crown of the head is also white, broadly streaked with black. There is also a black streak behind the white frontal patch, continued to the front and below the eye on each side joining the black streak from the lower mandible, and getting lost on the neck, whence springs a black demicollar not extending on the upper surface of the neck, which, like the head, is white with dark streaks; back of neck white, extending down the sides between the black demicollar and sides of the breast; chin white; throat and breast deep black; upper back and scapulars black, the feathers broadly edged and tipped with red rust colour; some wholly so, especially the scapulars; lesser and median wing coverts black, broadly edged and tipped with bright rust colour; the tips of the greater or secondary coverts white, forming a wing band; quills black, the inner webs, and part of the outer webs of the last two or three basally white; secondaries like the quills, but broadly white on their inner webs, and also narrowly tipped white; tertials dark brown, edged and tipped with rusty; back, entire lower surface below the breast, and upper tail coverts white; rump with a patch of black; tail as in the winter plumage; irides deep brown; legs orange yellow.

*Length.*—8 to 8·5 inches; wing 6; tail 2·5.

*Hab.*—India generally and Ceylon, along the sea shores, and sometimes inland along the banks of large rivers. Its geographical range is very wide, being found in Europe, America, and Africa, and throughout Asia, in suitable localities. In Sind it is extremely common in the Kurrachee harbour and at the mouths of the Indus. It occurs also on the Sambhur lake, and on the banks of the river at Poona, in the Deccan; also on the Beloochistan Coast and in the Persian Gulf.

### Gen. **Dromas.**—*Payk.*

Bill long, lower mandible strongly angulated; tarsus long; wings reach beyond the tip of the tail; feet webbed; hind toe long and slender.

**144. Dromas ardeola,** *Paykl., Handlist Ac. Vet. Stockhlm.* t. 8; *Jard. and Selby, Ill. Orn.* pl. 157; *Jerd., B. Ind.* iii. p. 658; *Str. F.* ii. p. 293; vii. p. 186; viii. p. 383; *Murray, Hdbk., Zool., &c., Sind,* p. 212; *id., Vert. Zool. Sind,* p. 234; *Legge, B. Ceylon,* p. 986; *Murray, Avif. Brit. Ind.* ii. p. 598, No. 1275.—The CRAB PLOVER.

Whole head, neck all round, chin, throat, breast, entire lower parts, back, upper and lower tail coverts and upper tertials white; generally a dark loreal spot; mantle and interscapulars black; primaries and secondaries black, their inner webs white; greater wing coverts black; tail reddish ashy, as also are some of the tertials near their tips; bill black, 2·5 inches in length; irides brown.

*Length.*—15 to 15·5 inches; wing 8·75 to 9; tail 2·5.

*Hab.*—Indian coasts, Ceylon, Africa, Red Sea, Seychelles, Madagascar, Beloochistan Coast and the Persian Gulf. Common in Sind in the Kurrachee harbour. Breeds in the Persian Gulf near Bushire. Mr. Hume has given an account of its nidification in vols. vii. and viii. of *Stray Feathers.* There is no nest, and the eggs are laid in a burrow about 4 feet deep in the loose sand; but whether this is dug by the bird, or is that of a crab, is still a question, the holes being, it is said, too narrow to admit the bird.

### Gen. **Hæmatopus**—*Linn.*

Bill straight, long, very slightly bent upwards; nostrils linear in a long cleft; toes three, all placed forward; no hind toe.

**145. Hæmatopus ostralegus** *Linn., Syst. Nat.* 1, p. 257; *Jerd., B. Ind.* ii. p. 659; *Hume, Str. F.* i. p. 234; *Blyth, B. Burm.* p. 154; *Dresser, B. Eur.* vii. p. 567; *Hume, Str. F.* viii. p. 112; *Legge, B. Ceylon* p. 987; *Murray, Vert. Zool. Sind,* p. 235; *Murray, Avif. Brit. Ind.* ii. p. 599, No. 1276. Hæmatopus osculans, *Swinh., P. Z. S.* 1871, p. 405; *Dav. et Oust. Ois Chine,* p. 432.—The OYSTER CATCHER.

Entire head, neck, breast, upper back, scapulars and tail black; lower orbital feathers white; lower back, and entire lower parts white, also a ring round the throat; primaries black, the inner webs and part of the outer webs of all, except the first two quills, white; the white on the outer webs of the innermost primaries spreading to the edges; secondaries basally and narrowly at tip white, with a subterminal black band; greater coverts and some of the secondaries and lower tertiaries white, forming a large wing patch; lesser and primary coverts black; bill orange yellow, or bright scarlet, 3·5 to 3·75 inches long; irides lake red; orbits orange.

*Length.*—16 to 17 inches; wing 10·5; tail 4; tarsus 2·25.

*Hab.*—Europe, Siberia, India, Ceylon, Afghanistan, Beloochistan, Persian Gulf, Sind, the Eastern and Western Coasts of India; in fact has a very wide distribution. Inhabitant of the sea shores, being seldom found inland. It lives chiefly on molluscs, worms, &c., and is said to easily disengage limpets from the rocks, and to pluck out the oysters from their half-opened shells, with its admirably adapted wedge-shaped bill. Oyster-Catchers feed in the mornings and evenings, and also at night, and are at all times watchful and shy in their habits.

## Family, GRUIDÆ.

Bill long; mandibles equal; nostrils in a deep groove; wings long; tertials long; tail short, even; tarsi long, scutellated.

**146. Grus antigone,** *Linn.*, *Syst. Nat.* p. 235; *Jerd.*, *B. Ind.* ii. p. 662; *Hume*, *Nests and Eggs Ind. B.* p. 584; *Blyth*, *B. Burm.* p. 157; *Oates*, *Str. F.* v. p. 164; *Hume and Dav*, *Str. F.* vi. p. 458; *Murray*, *Vert. Zool.*, *Sind*, p. 235; *Hume and Marsh.*, *Game Birds* ii. p. 1, pl.; *Oates*, *B. Br. Burm.* ii. p. 354; *Murray*, *Avif. Brit. Ind.* ii. p. 600, No. 1277.—The Sarus Crane.

Head and neck naked, covered behind with numerous crimson papillæ, and clad with a few black hairs, which accumulate below on the neck, and form a sort of mane down the nape of the neck; ear coverts white; below this the neck is whitish grey, which gradually passes into a blue or French grey, which is the colour of the whole plumage, the quills and inner webs of the tail feathers being dusky slaty; seasonally it assumes a pure white collar immediately below the crimson papillose skin of the neck, and some of the tertiaries and scapulars become white, lengthened, hang over gracefully and exceed the tail in length; bill pale sea green, brownish at the tip; irides orange red; legs and feet pale rosy red.

*Length.*—52 inches; wing 26; tail 9·25; bill at front 6·25, tarsi 12·5 to 13. (*Jerdon.*)

I have not a satisfactory specimen.

*Hab.*—Throughout the greater part of India. It is rare in Sind. In the Punjab it is found in the Delhi and other districts, also in the N.-W. Provinces, Rajputana, Kutch, Concan and Deccan. It has also been found occasionally in Khandesh. Throughout the Central Provinces, also the Madras Presidency, north of the Godavery, Chota Nagpur and Lower Bengal it is common in suitable localities. Breeds over the whole of the N.-W. Provinces, Upper Bengal, British Burmah, Assam, Oudh and Guzerat; also Central India and Khandeish, during August and September, laying 2 eggs, of a pale green colour, speckled with yellowish brown purple or purplish pink. Many are quite unspotted.

**147. Grus leucogeranus,** *Pall.*, *It.* t. i; *P.C.* 467; *Jerd.*, *B. Ind.* iii. p. 663; *Str. F.* i. p. 235; vii. p. 437; *Murray*, *Hdbk.*, *Zool.*, *&c.*, *Sind*, p. 213; *id.*, *Vert. Zool. Sind*, p. 236; *Hume and Marsh.*, *Game. Birds*

ii. p. 4; *Murray, Avif. Brit. Ind.* ii. p. 600, No. 1278.—The Large White, Snow-wreath, or Siberian Crane.

Plumage wholly white; primaries black; tertiaries white, much lengthened and reaching to or beyond the end of the tail; nude parts of the face and legs red; hind head subcrested. In the young Mr. Hume (*Game Birds of India*) says: "There is no bare space about the face, the whole head and upper half of the neck are of a somewhat rusty buff, which is deepest on the head and cheeks, and paler on the chin and throat."

*Length, Male.*—53 to 56 inches; wing 23 to 26; expanse 90 to 99·5; tarsi 11 to 12; bill from gape 7·75 to 8. *Females* are smaller; irides pale yellow; bill brown; nasal membrane red.

*Hab.*—A winter migrant to India; occurs in the N.-W. Provinces, Punjab, Sind, parts of the Central Provinces and the Himalayas; also in Afghanistan, Eastern Turkistan and Siberia. Uncommon in Sind. I have never met with it. Mr. Hume has however seen and recorded it.

Grus cinerea.

**148. Grus cinerea** (*Bechst.*), *Bodd. Pl. En.* 769; *Gould, B. Eur.* pl. 270; *Jerd., B. Ind.* iii. p. 865; *Str. F.* i. p. 235; iv. p. 15; *Murray,*

*Hdbk., Zool., &c., Sind,* p. 213; *id., Vert. Zool. Sind,* p. 237; *Hume and Marsh., Game Birds* iii. p. 92; *Murray, Avif. Brit. Ind.* p. 601, No. 1279. (*Koonj,* Sind; *Kulling,* N. India).—The COMMON CRANE.

Forehead to the middle of the crown covered with black hairy down, through which the red skin shows; behind this nearly bare and entirely so for about two inches on the nape, which is ash grey; chin, throat and foreneck black; a broad white streak from behind the eye, extending along the back of the neck from below the nape and partly on the sides; lores and cheeks black; upper and lower surface of the body dark bluish ashy; greater wing coverts dull black; secondaries and tertiaries grey and tipped with black, the latter in texture resembling the plumes of the ostrich, narrowing to a point, forming an elegant tuft of loose feathers, curled at the ends and falling gracefully over the tail; legs and bare part of the thighs black; bill greenish brown at the base, tinged blackish in the middle, with the tip dark horny; irides yellowish, orange red or reddish brown in some.

*Length.*—43 to 46 inches; wing about 24; tail 7; tarsus 8·75 to 9; bill 4·3 to 4·8.

*Hab.*—Europe, India, N. Africa. In India it is a winter visitant everywhere. Besides occurring in Sind, it is recorded from Rajputana, Kutch, Kattiawar, Deccan, N. Guzerat, Rajputana, Central India, Khandeish, Punjab, N.-W. Provinces, Oudh and Bengal. It has also been found in Afghanistan, Beloochistan and Persia.

When feeding the Common Crane has always a sentinel posted to give the alarm of danger, and hence it is extremely difficult to get within gunshot of the flock. The ordinary procedure is to walk alongside a bullock or horse, as if passing by them, and to fire immediately they rise; a duck gun with large shot usually brings down 2 or 4 out of a flock. In Sind and probably in other parts of India too, the food of this Crane consists of grain of all kinds; when in large parties they commit great havoc in wheat fields. Young shoots of grain, rice and pulses generally are however preferred by them. It is when they have fed a fortnight or so on food of this kind that this crane is best fitted for the table. They are then very fat, and the flesh becomes succulent and juicy, and done up in any shape, as Hume says, it is as well tasted a bird as can be found, and when *properly* cooked well merits any praises that our forefathers, who chiefly saw grain-fed birds, may have bestowed on them.

### Gen. **Anthropoides**.—*Vieill.*

Bill shorter than in *Grus;* head and neck feathered; breast feathers lanceolate and hackled; tarsi long.

**149. Anthropoides virgo** (*Linn.*), *Bodd. Tab. Pl. Enl.* 241; *Edw. B.* pl. 134; *Jerd., B. Ind.* iii. p. 666; *Murray, Hdbk., Zool. &c., Sind*; *Hume, Str. F.* iv. p. 15; *Murray, Vert. Zool. Sind*, p. 237; *id., Avif. Brit. Ind.* ii. p. 602, No. 1282.—The DEMOISELLE CRANE.

Forehead, lores, sides of the face, chin, throat, neck in front, and breast plumes deep black; ear tufts white, issuing from behind the eye; primaries black; secondaries grey, black tipped; back, scapulars, tertials, upper tail coverts and entire lower surface pale blue grey; tertials elongated and drooping over the primaries and tail feathers; most of them with a broad black tip.

*Length.*—31 to 35 inches; wing 19 to 20 or more; tail 6 to 7·5; tarsus 7; bill from gape 2·7 to 3·05; tertiaries project about 6 inches beyond the primaries.

*Hab.*—Throughout the greater part of India; rare in Sind. Occurs in Rajputana, Kutch, Kattiawar, N. Guzerat, Deccan, the Nizam's dominions, where it is rare; also in Assam, N.-W. and Central Provinces, Central India, Khandeish and Oudh. Occurs also in Afghanistan and Beluchistan and probably also in Persia. In the Deccan, about the Satara and Belgaum districts, as well as in the Concan and South India, it is said to be fairly common, arriving about December. There is a difference of opinion in regard to the fitness of the Crane for the table. Most persons never lose an opportunity of tasting the flesh, if there is nothing better, and being a bird seldom got at without much trouble and stalking, the most is made of it.

## Tribe, LONGIROSTRES.—*Cuv.*

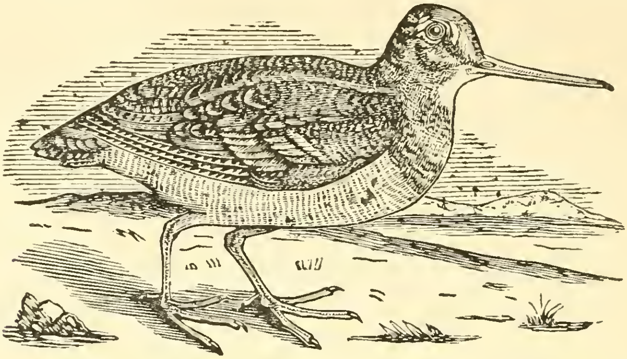
A family of wading birds, in which Cuvier includes the snipe, godwits ibises, curlews, phalaropes, &c., at the end of which come the avocets. These are nearly all migratory birds, and associate in flocks during winter. The characters by which this tribe is chiefly distinguished are the long slender bill, and long and pointed wings; the hind toe is usually present but wanting in some.

## Family, SCOLOPACIDÆ.

Bill long, straight, compressed, soft, the point enlarged; the mandibles furrowed for half their length; upper mandible slightly longer than the lower; nostrils lateral, situated basally in a groove and covered by membrane; feet moderate, slender, three toed, not webbed; hind toe present; plumage varied and rich. All the species are much esteemed as food.

### Gen. **Scolopax**.—*Linn.*

Characters same as those of the Family; lower mandible channelled only to the middle; wings long, 1st quill longest; tibia feathered to the knee.



**150. Scolopax rusticola,** *Linn., Syst. Nat.* i. p. 243; *Jerd., B. Ind.* iii. p. 670; *Blyth, B. Burm.* p. 157; *Anders., Str. F.* iii. p. 356; *Dresser, B. Eur.* vii. p. 615, pl.; *Hume and Dav., Str. F.* vi. p. 458; *Hume, Str. F.* viii. p. 112; *Bingham, Str. F.* viii. p. 196; *Hume and Marsh., Game Birds* iii. p. 311; *Murray, Avif. Brit. Ind.* ii. p. 360, No. 1281, pl. Scolopax rusticula. *Dav. et Oust. Ois. Chine*; *Legge B. Ceylon*, p. 806; *Oates, B. Br. Burm.* p. 380; *Murray, Vert. Zool., Sind,* p. 238.—The Woodcock.

The peculiar shape of the head of this esteemed bird is almost a sufficient character to identify it among others. The head is more obtusely triangular than round; the eyes are placed above its middle, near the top, and the ears are nearly on a level with the corner of the mouth. Crown of the head ashy, or ashy grey; the nape and back part of the head with four transverse alternate bands of black and rusty red or chestnut brown; a dark streak from the gape to the eye; the orbital feather pale buff; back, scapulars, wing coverts, and upper tail coverts, marbled, spotted, barred, streaked and variegated with black, white, grey, red, brown, rufous and yellow, that it is not possible to describe them with accuracy; chin pale yellowish brown, or nearly white; throat and breast pale brown, barred transversely with dark brown; primaries blackish, with triangular spots of pale reddish brown on both webs; secondaries and tertiaries blackish, but with the markings more elongated and reaching to the shaft. The whole under parts are yellowish white, numerously barred with transverse dark undulating lines; tail black, with spots and bars on both webs, the tips ashy grey above and silvery white below; tibia feathered to the knee. The female is larger, and only differs from the male in this respect and its duller tints.

*Length.*—14 to 16 inches; wing 8 to 8·25; tail 3·25; bill at front 3 to 3·2 (upper mandible); tarsi 1·5 to 1·8; irides dark brown; legs livid fleshy, as also is the bill with a tinge of grey.

*Hab.*—Europe, Egypt, India, including Burmah, Ceylon and Java. In India it is a summer resident on the wooded ranges of the Himalayas, and a winter visitant to the Neilgherries and the higher ranges of Southern India, parts of the Punjab, Nepaul, Sylhet and Bengal, frequenting damp situations, and feeding on worms, snails, slugs, &c. In Sind it is extremely rare, and is known only by two specimens obtained at Kurrachee. It is also said to occur in North Canara and the Concan, also in Persia, Beloochistan and Afghanistan. It breeds in the Himalayas during June, laying buff-coloured eggs blotched with reddish brown.

## Gen. **Gallinago**.—*Steph.*

Characters the same as in *Scolopax*. Tibia not feathered to the knee; tail of 16—18 feathers.

**151. Gallinago nemoricola** (*Hodgs.*), *Jerd.*, *Ill. Ind. Orn.* pl. 9; *id.*, *B. Ind.* iii. p 672; *Hume*, *Str. F.* vi. p. 459; *id. and Marsh.*, *Game Birds*, p. 325; *Murray*, *Avif. Brit. Ind.* ii. p. 604, No. 1282.—The Wood Snipe.

Top of the head black, with rufous yellow longish markings; upper part of the back black, the feathers margined with pale rufous yellow and often smeared bluish; scapulars the same, some of them with zigzag markings; long dorsal plumes black with zigzag marks of rufous grey, as are most of the wing coverts; winglet and primary coverts dusky black, faintly edged whitish; quills dusky; lower back and upper tail coverts barred reddish and dusky; tail with the centre feathers black at the base and chestnut, with dusky bars towards the tip; laterals dusky with whitish bars; beneath the chin white; the sides of the neck ashy, smeared with buff and blackish; breast ashy, smeared with buff and obscurely barred; the rest of the lower plumage, with the thigh coverts, whitish, with numerous dusky bars; lower tail coverts rufescent, with dusky marks, and the under wing coverts barred black and whitish. Bill reddish brown, paler at base beneath; irides dusky brown; legs plumbeous green. (*Jerd.*)

*Length.*—12·5 to 13 inches; wing 5·75; tail 2·5; bill at front 2·6; tarsus 1·75.

*Hab.*—The Himalayas, Neilgherries, Coorg, Wynaad and other elevated regions in Southern India, affecting brushwood in swampy ground.

**152. Gallinago solitaria** (*Hodgs.*), *J. A. S. B.* vi. p. 491; *Jerd.*, *B. Ind.* iii. p. 673, No. 869; *Hume and Marsh.*, *Game Birds* iii. p. 333; *Murray*, *Avif. Brit. Ind.* ii. p. 605, No. 1283.—The Eastern Solitary Snipe.

Head above brown, with pale mesial and superciliary lines; a dark band from the base of the bill extending towards the ear coverts; upper plumage as

in *G. scolopacinus*, except that the feathers are more spotted and barred with rufous; a pale buff stripe along scapulars and inner edge of the wing; primaries brown, with a narrow pale edging externally and the innermost tipped with white; secondaries and tertiaries broadly barred with dark brown and pale rufous; tail deep black at base, with a broad subterminal band of bright ashy rufous, tipped brown, and the extreme tip pale; outermost rectrices finely barred; breast olive brown, with white dashes of white and brown bars, passing into white on the abdomen and vent, with some olivaceous bands on the upper belly and flanks; sides of the vent and under tail coverts whitish. Bill reddish brown; irides dark; feet greenish yellow.

*Length.*—12·5 inches; wing 6·25; tail 3·2; bill at front 2·75; tarsus 1·2.

*Hab.*—Throughout the Himalayas from Gilgit to Central Bhootan. During the summer it is said to be confined to the higher ranges from elevations of 9,000 feet and upwards to at least 15,000 feet, where they breed during May and June.

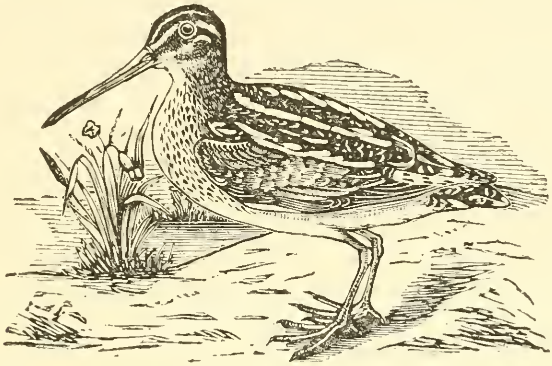
**153. Gallinago stenura** (*Kuhl.*), *Jerd.*, *B. Ind.* iii. p. 674; *G. F. L. Marshall*, *Str. F.* i. p. 423; *Cripps*, *Str. F.* i. p. 496; *Hume*, *Str. F.* ii. p. 294; *Hume and Dav.*, *Str. F.* vi. p. 459; *Murray*, *Vert. Zool. Sind*, p. 239; *Legge*, *B. Ceylon*, p. 816; *Oates*, *B. Br. Burm.* ii. p. 383; *Murray*, *Avif. Brit. Ind.* ii. p. 605, No. 1234. Scolopax stenura *Kuhl.*, *Bonap. Osserv. Sulla, sec. Ediz. Regn. Anim. Cuv. Monog. Scolopax*, p. 121.—The Pin-tail Snipe.

Crown dark brown or black, with a mesial longitudinal pale line; face white, divided by a dark line from the nostrils to the eye and extending to the ear coverts; there is also in some specimens a faint line from the ear coverts to in front of the neck on each side, but not meeting; chin and throat white; neck in front and behind pale fawn brown, barred, streaked or spotted with brown or dark brown; sides of the abdomen like the breast, and transversely barred; middle of abdomen white, barred in some specimens; upper back, scapulars and wing coverts brown, darker on the mantle and scapulars, the feathers of which are broadly edged with yellow and spotted and streaked with rusty; the scapulars, tertials and wing coverts barred with the same; lower back, rump and upper tail coverts rufescent brown, barred with dusky; under wing lining and axillaries white, distinctly and richly barred with blackish brown; tail basally dark brown, followed by a large oval rufous or rufous buff patch, and a narrow subterminal dark band, tipped pale rufous or the colour of the oval patch; primaries and their coverts, also the secondaries, pale brown or dusky, narrowly margined at the tip with white, both webs unicolorous.

*Length.*—9·75 to 10 inches; wing 4·8 to 5·4; tail 2 to 2·5; tarsus 1·12 to 1·25. Females are larger. Legs and feet plumbeous with a greenish tinge; irides deep brown; bill 2·2 to 2·6; gape and base of bill greenish; rest of bill

pale horny, with a dusky tip for about one-third its terminal length. In the females the bills average from 2·45 to 2·7.

*Hab.*—Nearly throughout India and Ceylon; rare in the Punjab, N.-W Provinces and Sind, also in Rajputana, Kutch and Kattiawar; fairly common in N. Guzerat, Central India and Khandeish. In Bombay, Concan generally, and the Deccan, as well in the Nizam's Provinces, it is plentiful, also in Lower Bengal, east and west of the Brahmapootra. It is recorded from Arracan, Pegu, Tenasserim, the Andamans and Nicobars, where it is most commonly met with. This snipe is a migrant; arrives in Sind about the middle of August, and leaves about the end of March or middle of April. Rice fields, mud swamps, and the vicinity of large rivers, jheels and tanks, where there are sedges and rushes, are the selected spots of the Pin-tail, at least in Sind.



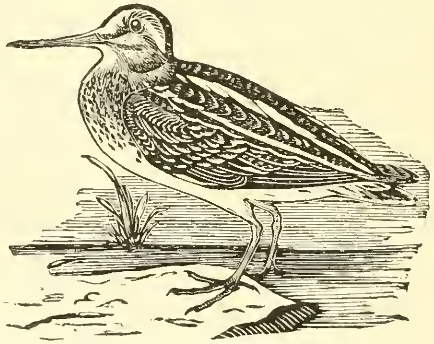
**154. Gallinago scolopacina,** *Bonap., Comp. list, B. Eur. and N. Amer.* p. 52; *Jerd., B. Ind.* iii. p. 674, No. 871; *Hume, Nests and Eggs Ind. B.* p. 586; *Hume and Dav., Str. F.* vi. p. 459; *Legge, B. Ceylon*, p. 820; *Murray, Vert. Zool., Sind*, p. 240; *Murray, Avif. Brit. Ind.* ii. p. 606, No. 1285, pl. Scolopax gallinago, *Linn., Syst. Nat.* i. p. 244. Scolopax cœlestis, *Frenzl., Beschr. der Vogel und ihrer Eier in der Gegend Von Wittenberg* p. 58. Gallinago gallinaria (*Gm.*), *Cripps, Str. F.* vii. p. 302; *Hume, Str. F.* viii. p. 112; *Bingham, Str. F.* viii. p. 112. Gallinago cœlestis, *Dresser, B. Eur.* vii. p. 641, pl.; *Hume and Marsh., Game Birds* iii. p. 359; *Oates, B. Br. Burmah*, p. 381.—The Common Snipe.

Crown of the head black, with a mesial longitudinal white, yellowish, or rusty white line; a superciliary on each side from the base of the upper mandible of the same colour, and a dark streak below it to the eye; sides of the head spotted with dusky grey, tinged ferruginous brown; chin and throat white, or nearly white; neck on the sides and in front yellowish white, spotted with brown; breast white, brown, pale yellowish or ferruginous on the upper part, and spotted with dusky; the sides greyish white, barred with dark brown; back and scapulars velvetty black, the feathers

broadly edged with yellow, and barred and spotted with chestnut brown; the yellow edges to the feathers forming four conspicuous lines on the back; upper tail coverts barred with alternate bars of dusky black and pale yellowish brown, somewhat rufescent; the under tail coverts pale yellowish fawn, also barred with dusky or dark brown; the middle of the abdomen is white, in some specimens tinged with pale buffy fawn; axillaries and flanks white, barred with dusky or dark brown, but not so broadly, close and numerous as in *Stenura;* under wing lining white, a few bars only on the edge of the wing; a white patch always conspicuous in the centre of the wing; greater and lesser wing coverts dusky or dark brown, barred with rufescent, and edged and tipped with pale white or cream colour; primaries dusky or dark brown, *the first with its outer web white;* secondaries dusky or dark brown, broadly tipped with white; the outer edges of their inner webs white, and treated with dusky; the inner webs of the primaries also whitish basally and mottled minutely with dusky; tertiaries rufescent, barred with dark brown; tail black at the base, with an oval patch of rusty orange or ferruginous, then a subterminal narrow band, and tipped with buffy or pale reddish yellow, in some specimens white; legs pale green; bill terminally for one-third or more of its length deep brown, the rest basally horny brown with a green and yellowish tinge; its length from gape, of males 2·39 to 2·7; at front 2·43 to 2·75; of females 2·62 to 3·0 at front, rather flat at the tip.

*Length, Male.*—9 to 11 inches; wing 4·9 to 5·5; tail 2·5 to 2·8. *Females* larger.

*Hab.*—Throughout India, Ceylon and Burmah as a winter visitant, also Persia, Beloochistan and Afghanistan. Arrives in Sind about the beginning of September and leaves in April, and with the Jack Snipe is tolerably abundant everywhere. It is a very vigilant bird, and in consequence difficult to shoot, especially in bogs and moist localities where rushes are present. In such retreats, three, four or half-a-dozen may be seen at a time, walking leisurely, with head erect, and constantly on the alert; and at the first note of alarm, they rise, and soon get out of gunshot. This species, it need hardly be mentioned, is held in much esteem for the table.



Gallinago gallinula. The Jud-Cock.

**155. Gallinago gallinula** (*Linn.*), *Jerd.*, *B. Ind.* iii. p. 676; *Hume*, *Str. F.* iii. 182; *Blyth*, *B. Burm.* p. 157; *Dav. et Oust. Ois Chine*, p. 479; *Dresser*, *B. Eur.* vii. p. 653; *Hume and Dav.*, *Str. F.* vi. p. 459; *Cripps*, *Str. F.* vii. p. 302; *Hume*, *Str. F.* viii. p. 112; *Legge*, *B. Ceylon* p. 828; *Hume and Marsh.*, *Game Birds* iii. p 373, pl.; *Hume*, *Str. F.* x. p. 239 (note); *Oates*, *B. Br. Burm.* ii. p. 384; *Murray*, *Vert. Zool.*, *Sind*, p. 241; *Murray*, *Avif Brit. Ind.* ii. p. 608, No. 1286. Scolopax gallinula, *Linn.*, *Syst. Nat.* i. p. 244.—The JACK SNIPE or JUD-COCK.

Crown of the head with a mesial longitudinal black streak from the top of the upper mandible; on each side of this a yellowish or cream-coloured streak extending above the eye as a superciliary, and in some specimens separated from the orbital region by a dark streak; a dusky line from the gape to the eye, and another from below it curving downwards to the ear coverts; the space between the two streaks white or cream colour; chin and throat white, greyish, or pale brown; sides of the head greyish, greyish white, or brownish white, spotted with brown and pale red; neck behind and nape ferruginous or greyish brown, streaked or spotted with dusky; breast pale yellowish brown or dusky, spotted or dashed with darker brown; abdomen white; flanks dashed with brown and pale ferruginous; axillaries pure white, with faint, almost obsolete dusky markings; back and scapulars rich black, with bronze green and purple reflections, the feathers of the upper back and scapulars edged on their outer webs broadly with rich cream yellow, forming two conspicuous longitudinal bands along each side; lower back and rump glossy blue black (specimens in August very narrowly margined with albescent); primaries dusky, the basal half of the first paler, *not white*; inner primaries narrowly margined at the tip with albescent; secondaries dusky, broadly tipped with white; tertiaries dusky on their inner webs, spotted and streaked with reddish or yellowish brown on their outer webs; tail dusky or dark brown, edged near the tips with pale ferruginous; under tail coverts white; legs and feet pale greenish; irides deep brown.

*Length.*—8·5 inches; bill dark brown at the tip, 1·6 to 1·8 inches in length at front; wing 4 to 4·6 inches; tail 1·8 to 2·2.

*Hab.*—Everywhere in India, and more plentiful than the common snipe, with which it is generally associated. In Sind small parties begin to arrive about the 26th August, or a few days earlier than the common snipe. It is a difficult bird to flush, seldom rising until nearly trampled upon. It prefers deep cover at all times, but I have often seen them on the oozy, semi-fluid mud of back waters, where there was not even a stubble for cover.

## Gen. **Rhynchæa**.—*Cuv.*

Bill shorter than in *Gallinago*, curved downwards at the tip; wings rounded; tarsi long; tibia nearly entirely bare.

**156. Rhynchæa capensis,** *Linn., Syst. Nat.* i, p 246. Rhynchæa Bengalensis, *Jerd., B. Ind.* ii. p. 677; *Hume, Nests and Eggs Ind. B.* p. 586; *Salvad., Ucc. Born.* p. 335; *Blyth, B. Burm.* p. 157; *Butler, Str. F.* iv. p. 15; v. p. 223; *Dav. et Oust. Ois. Chine.* p. 480; *Wardlaw-Ramsay, Ibis,* 1877, p. 469; *Hume and Dav., Str. F.* vi. p. 459; *Cripps, Str. F.* vii. p. 302; *Hume, Str. F.* viii. p. 112; *Legge, B. Ceylon* p. 800; *Bingham, Str. F.* ix. p. 197; *Hume and Marsh., Game Birds* iii. p. 381, pl.; *Oates, Str. F.* x. p. 239; *Murray, Vert. Zool., Sind,* p. 242; *Oates, B. Br. Burm.* ii. p. 386; *Murray, Avif. Brit. Ind.* ii. p. 609, No. 1287.—The Painted Snipe.

Crown of the head with a broad mesial longitudinal line, bordered by dark brown, nearly black feathers, which form a line from the sides of the upper mandible to the nape, where it is broader than in front; a yellowish buff circle round the eye, and a line behind it; chin and throat whitish, the feathers with some faint dusky spots; neck in front and breast olive brown, the feathers with white spots and bars; the feathers on the lower part of the sides and middle of the breast nearly dark brown, forming a dark pectoral band, another similar band below this with a white interspace, but not meeting on the breast; hind neck olivaceous, finely marked with dark transverse striæ; mantle and scapulars dark brown, with dark margined buffy yellow and white bars; wing coverts and tertiaries pale olive, with black margined transverse bands or bars of rufous buff, broader and more conspicuous on the tertiaries; outer web of the first primary grey brown, the rest paler, and all with 5—6 buff or rufous buff ocelli; the interspaces between the basal three ocelli deep black, and between the terminal ones greyish brown; inner webs of primaries with white bars and dark wavy lines and marblings; secondaries ashy grey, ocellated with buff on their outer webs, the interspaces basally black, and terminally with dark brown wavy lines; their inner webs, like the primaries, with white bars and wavy lines, and the tips margined with white, the patterns showing through paler on the under side of the wing; tail ashy grey, with buff ocelli on both webs, and tipped with buff; abdomen, vent and under tail coverts white. The female has the lores, sides of the face, upper breast and back of neck chestnut, the feathers edged whitish on the upper breast; back, scapulars and wing coverts, also the tertiaries, dark olive with narrow, close, black striæ, the outermost tertials white, otherwise as in the male. Bill reddish brown; irides deep brown; legs and feet greenish.

*Length.*—9 to 10 inches; wing 4·9 to 5·2; tail 1·5 to 1·8; bill at front 1·8 to 2 inches.

*Hab.*—Sind, Kutch, Kattiawar, Rajputana, Central India, Punjab, N.-W. Provinces, British Burmah and Ceylon. Breeds in Sind during May and June, and in nearly all localities where it occurs.

### Gen. **Limicola.**—*Koch.*

Characters same as *Rhynchœa;* bill broad and depressed.

**157. Limicola platyrhyncha** (*Temm.*), *Salvad., Ucc. Born.* p. 322; *Dresser, B. Eur.* viii. p. 3, pl.; *Hume and Dav., Str. F.* vi. p. 461; *Hume, Str. F.* viii. p. 113; *Legge, B. Ceylon*, p. 896; *Oates, Str. F.* x. p. 240; *id., B. Br. Burm.* ii. p. 387; *Murray, Vert. Zool., Sind*, p. 252; *Murray, Avif. Brit. Ind.* ii. p. 160, No. 1288. Tringa platyrhyncha, *Temm., Man d'Orn.* p. 398; *Jerd., B. Ind.* ii. p. 692, No. 886; *Blyth, B. Burm.* p. 156.—The Broad-billed Sandpiper.

In winter, the crown of the head, back, scapulars and wing coverts are ashy brown, tinged with rufous; neck and cheeks white, spotted with brown; primaries and tail brown, the latter edged with pale reddish ashy; lower parts white; the flanks, breast and under tail coverts tinged with rufous. In summer dress the Broad-billed Sandpiper has the crown of the head brownish black, varied with greyish; the neck on the sides and in front greyish white, with black spots, and tinged with buffy; chin white, with a few dark spots; lower back black, with fulvous white or rufous margins to the feathers.

*Length.*—6·5 to 6·75 inches; wing 3·9 to 4·32; bill at front 1·27 to 1·37; tarsi 0·94; irides deep brown; legs and feet dusky black.

*Hab.*—The Indian Coast generally. Occurs commonly at Kurrachee and along the Mekran Coast, also at Kutch and in Bengal. Recorded from Arracan, also from Pegu, and Amherst in Tenasserim. Frequents sea-coasts and tidal rivers.

## **Sub-Family,** TRINGINÆ,—Stints, &c.

Bill rather long, flat and wide, keeled near the tip, somewhat flexible; nostrils in a groove, extending two-thirds the length of the bill; wings long; toes divided or narrowly webbed.

### Gen. **Eurynorhynchus.**—*Nilsson.*

Bill much depressed, broad, flat, ridged in the centre at the base, and ending in a flat somewhat obcordate, expanded tip, which terminates in a deflected point; nostrils basal; toes cleft, with a small web between the outer and middle toes. (*Jerd.*)

**158. Eurynorhynchus pygmæus** (*Linn.*), *Harting, Ibis*, 1869, p. 427, pl. xii.; *Blyth, B. Burm.* p. 156; *Dav. et Oust. Ois. Chine*, p. 474; *Hume and Dav., Str. F.* vi. p. 463; *Hume, Str. F.* viii. p. 113; *Oates, B. Br. Burm.* ii. p. 395; *Murray, Avif. Brit. Ind.* ii. p. 611, No. 1289. Platalea pygmæa, *Linn., Syst. Nat.* i. p. 231. Eurynorhynchus griseus (*Nilss.*), *Temm., Man d'Orn.* ii. p. 594; *Jerd., B. Ind.* iii. p. 693, No. 887. —The Spoon-billed Stint.

In summer the head and upper parts are ferruginous, the feathers with dark brown centres; breast ferruginous; throat and breast margined with white; under surface of the body from below the breast becoming whiter towards the tail; primaries dark brown; legs and feet black; bill black; irides deep brown.

*Length.*—6·5 to 6·7 inches; wing 4·1; tail 1·7; tarsus 0·8; bill from gape 1.

In winter plumage the forehead, crown and hind neck, white; back and scapulars are hair brown, each feather with a darker shaft streak; lores ashy white; cheeks, ear coverts and sides of the neck whitish, streaked with brown; rump and upper tail coverts dusky brown, the feathers edged paler; tail brown, the inner webs of all the feathers except the central pair white; shafts of the lateral feathers whitish; lesser wing coverts uniform hair brown; median and greater coverts dark brown, broadly edged with white; quills dark brown, with white shafts; under surface of the body, including the axiliaries and under wing coverts, white; the sides of the breast streaked with brown.

*Length.*—6·5 inches; wing 3·7; tail 1·5.

*Hab.*—Arracan, Pegu, Tenasserim, and the mouth of the Ganges, usually found in the company of other Stints.

### Gen. **Tringa**.—*Linn.*

Toes edged by membrane; wings with the first quill longest; bill straight or slightly bent and obtuse at the extremity.

**159. Tringa minuta**, *Leisl., Nacht. zu Bechst. Naturg. Deutsch* i. p. 74; *Jerd., B. Ind.* ii. p. 690, No. 884; *Dresser, B. Eur.* viii. p. 29, pl.; *Hume, Str. F.* i. p. 242; *Legge, Str. F.* i. p. 491; *id., B. Ceylon*, p. 884; *Murray, Vert. Zool., Sind*, p. 257; *Oates, B. Br. Burm.* ii. p. 389; *Murray, Avif. Brit. Ind.* ii. p. 611, No. 1290.—The Little Stint.

In winter the upper parts are ashy or pale earthy brown, the feathers of the back, scapulars, tertials and lesser and median wing coverts mesially dusky or dark brown, and in some very narrowly edged with whitish. There is a dark spot in front of the eye, and a pale white supercilium; the chin, throat, centre of the breast and rest of the under surface, including the vent, axillaries and under tail coverts, are white; sides of the breast ashy brown; primaries mostly white shafted, dusky brown, slightly paler on their inner webs; secondaries white, basally and also narrowly tipped with white; greater wing coverts tipped with white, forming a conspicuous wing band; rump, upper tail coverts and two central tail feathers dusky or dark brown; lateral tail feathers pale ashy.

*Length.*—6·6 inches; expanse 13·1; tail 2·3; tarsus 0·9; wing 3·8; bill at front 0·6; irides deep brown; legs black.

*Hab.*—Nearly throughout Europe and India, also Java, Formosa, Australia and China. In Sind, along the coast; also in the Kurrachee harbour; inland on the large pieces of water and on the Munchur Lake, this Little Stint is extremely common, also on the Mekran Coast, the Punjab, N.-W. Provinces, Oudh, Bengal, Burmah, and Ceylon. Occurs in Persia, Beloochistan (Quetta), Afghanistan, and in fact has a very wide distribution. In the Concan, Deccan and Southern India generally it is equally abundant.

**160. Tringa subminuta**, *Midd., Sib. Reise. Vog.* p. 222. *Taf.*, xix. p. 6; *Legge, B. Ceylon*, p. 889; *Oates, B. Br. Burm.* ii. p. 391; *Murray, Avif. Brit. Ind.* ii. p. 612, No. 1291. Tringa damacensis (*Horsf.*), *apud Hume, Str. F.* i. p. 243. Tringa salina (*Pall.*), *apud Legge, Str. F.* i. p. 491; *Dresser, B. Eur.* viii. p. 33; *Blyth and Wald., B. Burm.* p. 156. Tringa ruficollis (*Pall.*), *apud. Wald., Trans. Zool. Soc.* ix. p. 234; *Hume, Str. F.* viii. p. 113; *Oates, Str. F.* x. p. 240.—The Long-toed Stint.

*Summer Plumage.*—Forehead, top of head and nape dark brown, each feather with an edging of rich rufous on the terminal half; lores, cheek and ear coverts the same; an albescent patch in front of the eye above the lores; upper part of the throat pure white; lower throat streaked with small marks of pale rufous brown; sides of throat, neck, upper breast and sides of body pale rufous brown, each feather with a central dark brown streak; lower breast, abdomen and vent pure white; under tail coverts white, each feather with a long, narrow central brown streak; thighs rufescent; upper neck mixed brown and pale rufous; whole upper plumage, including the scapulars and tertiaries, rich blackish brown, each feather broadly tipped with bright rufous; rump and upper tail coverts glossy black, few of the feathers of the latter obsoletely tipped white; centre tail feathers black, edged with rufous, the others pale brown, tipped and margined internally with white; axillaries white, a little brown at their bases; under wing coverts pale brown, edged with white; shaft of first quill sordid whity brown, those of the others dark hair brown; primaries and secondaries dark brown, all tipped with white except the first six primaries; all the primaries except the first three with a median narrow margin of white on the outer web; upper coverts brown, all more or less tipped and margined with dull white. In winter it resembles *T. minuta* in general appearance, but the upper plumage is darker; the forehead and face where white in *T. minuta* are streaked with brown in *T. subminuta*; the greater wing coverts and secondaries are very narrowly tipped with white, and the sides of the neck and the chest are thickly marked with brown streaks. Iris brown; bill olive-brown; legs and toes pale brown; claws nearly black.

*Length.*—6·2 inches; tail 1·4; wing 3·7; tarsus 0·8; middle toe and claw nearly an inch; bill from gape 7·5. The female is of the same size. This

Stint may be recognized by the great length of its toes, the middle one, including its claw, measuring frequently little short of an inch in length. It resembles *T. minuta* in having the outer tail feathers brown, but differs in having the shafts of all the primaries brown, except that of the first quill, which is dull white. From *T. Temmincki* it may be separated by the colour of its outer tail feathers as well as by its long toes. (*Oates.*)

*Hab.*—Arracan, Pegu and Tenasserim. Found also seasonally in N.-E. Siberia through China and Mongolia to Burmah, extending on the west to Bengal, the Eastern Coast of India and Ceylon, and ranging southwards to the Malay Peninsula, Java, Borneo, Celebes, and the Phillipines.

**161. Tringa Temmincki**, *Leisler, Nacht. zu Bechst. Naturg. Deutsch.* i. p. 63; *Jerd., B. Ind.* iii. p. 691; *Dresser, B. Eur.* viii. p. 45, pl.; *Hume, Str. F.* i. p. 244; iii. p. 183; *Blyth, B. Burm.* p. 156; *David et Oust. Ois. Chine*, p. 43; *Hume and Dav., Str. F.* vi. p. 461; *Hume, Str. F.* viii. p. 113; *Legge, B. Ceylon*, p. 892; *Murray, Vert. Zool., Sind*, p. 251; *Oates, B. Br. Burm.* ii. p. 392; *Murray, Avif. Brit. Ind.* ii. p. 613, No. 1292.—Temminck's, or the White-tailed Stint.

Upper parts as in *minuta*; chin, throat and supercilia white; a dark spot in front of the eye; breast and lower neck ashy brown; belly, vent and under tail coverts white; four central tail feathers dusky brown, the rest white; legs pale horny green, or greenish olive.

*Length.*—6 to 6·25; inches; wing 3·8; bill at front 0·7; irides deep brown.

*Hab.*—As the last and associated with it everywhere.

**162. Tringa crassirostris**, *Temm. et Schleg., Faun. Jap. Aves*, p. 107, pl. lxiv.; *Hume, Str. F.* i. p. 240; *Salvad., Ucc. Born.* p. 325; *Wald., Ibis*, 1874, p. 147; *Armstrong, Str. F.* iv. p. 341; *David et Oust. Ois. Chine*, p. 468; *Hume, Str. F.* viii. p. 113; *Murray, Vert. Zool. Sind*, p. 249; *Oates, Str. F.* x. p. 240; *id., B. Br. Burm.* ii. p. 393; *Murray, Avif. Brit. Ind.* ii. p. 613, No. 1293.—The Thick-billed Stint.

The following is Mr. Hume's description of the species.

"In the winter plumage the upper surface reminds one not a little of that of *Totanus stagnatilis*. The whole lower parts are white, but the base of the neck in front and the sides are marked with numerous small brown striæ, and the upper breast, besides having more or less of these striations, is mottled with larger pale brown spots, here and there interspersed with conspicuous heart-shaped blackish brown spots, which are the first traces of the coming summer plumage. Lores, top, back and sides of the head and neck very pale greyish brown, all the feathers narrowly streaked along the shaft with dark brown; the upper back and whole mantle is a mixture of pale brown and ashy, most of the feathers with blackish shafts, more or less darkly

centred, and all conspicuously, though narrowly, margined and tipped with white. Lower back and rump brown, the feathers narrowly and regularly margined with white ; upper tail coverts similar, but the white margins much broader, and the brown more or less obsolete on many of them. Tail feathers greyish brown, greyer and somewhat darker on the central ones, and paler and browner on the external ones ; all are excessively, narrowly, in fact almost obsoletely, bordered with white. The primaries and their greater coverts are hair brown, most of the latter tipped white ; the secondaries and their greater coverts are a pale, somewhat greyish brown, all of them narrowly, but the coverts less narrowly of the two, margined with white. The wing lining, except just at the margin of the wing, which is mottled with brown, pure white ; the axillaries white with traces of irregular, wavy pale brown bars. There are a few elongated triangular pale brown dashes on the flanks, and in some specimens one or two larger blackish brown spots pertaining to the summer plumage."

According to Schlegel, the summer plumage is as follows :—

"Feathers of the head and neck each with a large dark brown longitudinal streak or spot on an albescent ground, which is tinged with brownish rufous on the nape. Feathers of the breast and nape brownish black, each with a whitish transverse band, often tinged with brownish red towards the middle. The rest of the lower parts and the rump pure white, spotted, except towards the middle of the abdomen, with broader or narrower dark spots. Back and wings brownish black, lighter on the wing coverts ; all the feathers spotted and bordered with a bright brownish rufous, gradually disappearing towards the edge of the wing. Lower wing coverts white, becoming black at the base.

"Bill black, sometimes paler at the base of lower mandible ; legs and feet dusky, greenish dusky, yellowish plumbeous or pale plumbeous, according, I suppose, to age or seasonal progress.

"*Length.*—11·35 to 12 inches ; expanse 23·5 to 24 ; tail from vent 2·7 to 2·8 ; wing 7·1 to 7·3 ; bill at front 1·6 to 1·85 ; tarsus 1·4 to 1·55 ; wings when closed reach from 0·3 to 0·4 beyond end of tail."

*Hab.*—Kurrachee (Sind) and the Beloochistan Coast. Common during winter in the Kurrachee harbour and along the Mekran Coast. In Arracan and the delta of the Irrawaddy, as well at the Andamans. Recorded also from Australia and Java.

**163. Tringa subarquata,** *Gould, Nov. Comm. Petrop.* xix. p. 471, t. xviii. ; *Jerd., B. Ind.* ii. p. 689 ; *Blyth, B. Burm.* p. 156 ; *Dresser, B. Eur.* viii. p. 59 ; *Hume and Dav., Str. F.* vi. p. 460 ; *Legge, B. Ceylon*, p. 879 ; *Oates, Str. F.* x. p. 240 ; *Murray, Avif. Brit. Ind.* ii. p. 615, No. 1294. Pelidna subarquata, *Oates, B. Br. Burm.* ii. p. 394 ; *Salvad., Ucc. Born.* p. 322.—The CURLEW STINT.

*Winter Plumage.*—Bill curved downwards. Head, on the crown and sides, back of the neck and nape light greyish brown, streaked with darker brown and dusky black, with an olivaceous gloss; face and supercilia white, and a dark streak from the gape to the eye; sides of the neck and in front greyish, streaked with brown; breast the same; abdomen and upper and lower tail coverts white; back, scapulars and wing coverts ashy brown, the shafts darker; tail ashy grey, edged with white; primaries dusky brown, also the secondaries, which are tipped with white; axillaries white; lesser coverts grey, the shafts darker. Bill black; irides brown; legs dusky grey.

*Length.*—8 to 10 inches; wing 5; tail 1·75; bill at front 1·6. In summer plumage the forehead is whitish, mixed with pale reddish brown; supercilia pale yellowish white; chin white; head, neck and nape ferruginous with dark margins; throat, breast and upper abdomen chestnut; in a specimen obtained on 20th May the feathers are all narrowly edged with white; back, scapulars and tertiaries black; also the lesser coverts, the feathers edged with chestnut.

*Hab.*—India generally, and Ceylon, also Beloochistan, Persia and Afghanistan. Recorded from Cashmere and Egypt, also from Australia and Java. Common also in the low tidal portions of the plains between the Pegu and Sittang rivers and in the Irrawady delta. Recorded also from Arracan and the Tenasserim Coast. Found commonly along the Sind and Mekran Coasts and on the large dhunds, not far inland. It occurs in Kutch and Kattiawar and on the Bombay Coast in some numbers, also in the Kurrachee harbour.

**164. Tringa cinclus**, *Linn.*, [*Syst Nat.* p. 246; *Bodd.*, *Tab. Pl. Enl.* 852; *Gould*, *B. Eur.* pl. 329; *Jerd.*, *B. Ind.* iii. 690; *Str. F.* i. p. 242; *Dresser*, *B. Eur.* viii. p. 86, pl.; *Murray*, *Hdbk.*, *Zool.*, *&c.*, *Sind*, p. 220; *id.*, *Vert. Zool. Sind*, p. 247; *Murray*, *Avif. Brit. Ind.* ii. p. 615, No. 1295. Tringa alpina, *L.*—The Dunlin.

Crown of the head, lores and cheeks ashy brown; a pale white supercilium from the base of the bill over each eye; back and scapulars pale ashy brown, the feathers dark shafted and edged paler; lesser and median coverts brown, edged paler, tipped with whitish; throat, breast, belly, vent and under tail coverts pure white, the breast with a few brown streaks; tail with the two central feathers dusky or deep brown, the rest ashy and edged whitish.

*Length.*—6·5 to 7·5 inches; wing 4·5; tail 1·87; bill at front 1·25, black; legs greenish dusky; irides brown.

*Hab.*—Sind, Punjab, N.-W. Provinces, Oudh, Bengal, Guzerat, Kutch and Kattiawar Coast. A winter visitant, arriving about the middle of September. In the Kurrachee harbour the Dunlin is simply numerous, also on the Mekran Coast, where they may be seen running nimbly near the edges of the sea or skimming along near the surface in fairly large flocks.

## Gen. **Machetes**—*Cuv.*

Bill straight; first and second quills of wing longest; outer toe united as far as the first joint; hind toe short and elevated.

**165. Machetes pugnax** (*Linn.*), *Dresser, B. Eur.* viii. p. 87, pl.; *Hume and Dav., Str. F.* vi. p. 460; *Hume, Str. F.* viii. p. 112; *Scully, Str. F.* viii. p. 357; *Legge, B. Ceylon* p. 873; *Oates, Str. F.* x. p. 240; *Murray, Avif. Brit. Ind.* ii. p. 616, No. 1296. Tringa pugnax, *Linn., Syst. Nat.* i. p. 247. Philomachus pugnax, *Jerd., B. Ind.* ii. p. 687; *Murray, Vert. Zool., Sind*, p. 248.—The Ruff.

In winter the plumage of these birds is very variable, the upper parts are from pale earthy to rich brown, the feathers with black or dark brown central spots and fulvous edges; the head, nape and neck behind paler; chin and throat white; neck in front and breast pale earthy or grey brown, the feathers margined at the tip with white; abdomen, vent and under tail coverts white; primaries dark brown; secondaries paler, edged and margined at the tip with white; greater coverts tipped white, forming a wing band; the lesser and median ones black, edged with rufous or reddish brown, also the greater coverts in some stages. The plumage is so variable, that out of 50 skins or more, no two birds would be found alike. During summer or in their breeding plumage the males acquire a ruff, which is very variously coloured and stands erect behind the head, the face is covered with reddish tubercles and the upper parts and breast marked with transverse bars. Bill dusky; irides brown; legs fleshy yellow.

*Length.*—12 to 12·5, inches; wing 7·25; tail 2·5; bill at front 1·3; tarsus 2.

*Hab.*—Throughout India and Ceylon, and in great numbers during winter. Occurs also in Beloochistan, Persia and Afghanistan. Breeds in Europe. During spring on their return to the breeding grounds, generally the fens, they become very pugnacious, the females being "*causa terrima belli.*" Being polygamous, the Ruffs, on hearing the cry of a female or seeing one, immediately rouses itself, and begins a fight with others; their combats are described as being both desperate and long; at the end of the fight the female, it is said, becomes the mate or prize of the victor. Buffon says—"They not only contend with each other in a single rencounter, but they advance to combat in marshalled ranks." "Their actions in fighting," according to Selby, "are very similar to those of a game cock, with the head lowered, and the beak held in a horizontal position; the ruff and every feather distended, the former sweeping the ground as a shield;" and he adds "that in such feuds their contests are often attended by fatal consequences."

## Gen. **Calidris.**—*Cuv.*

Hind toe wanting, otherwise as in *Tringa.*

**166. Calidris arenaria** (*Linn.*), *Jerd.*, *B. Ind.* iii. p. 694; *Hume, Str. F.* i. p. 244; *Salvad.*, *Ucc. Born.* p. 322; *Armstrong, Str. F.* iv. p. 343; *Hume, Str. F.* iv. p. 465; *Dresser, B. Eur.* viii. p. 101, pl.; *Hume, Str. F.* viii. p. 113; *Legge, B. Ceylon*, p. 1220; *Oates, Str. F.* x. p. 240; *Murray, Vert. Zool., Sind*, p. 252; *Oates, B. Br. Burm.* ii. p. 398; *Murray, Avif. Brit. Ind.* ii. p. 617, No. 1297.—The SANDERLING.

In winter the forehead, lores, cheeks, chin, throat, breast, neck in front, belly, thighs, vent and under tail coverts white; crown of the head, sides of the neck and breast, back and scapulars cinereous or ashy brown, the feathers with dark shafts; shoulders and edge of the wing dark brown; median and greater coverts like the back, dark shafted and tipped white; primaries dark brown, all white shafted; their inner webs ashy, and the four middle ones white on their outer webs, forming in the closed wing a wedge-shaped spot; secondaries brown or dusky, tipped with white; rump and upper tail coverts brown, edged with white; tail brownish ash, edged with white, the two central feathers darker than the rest; bill black, 0·93 to 1 inch in length.

*Length.*—7·5; wing 4·75; tail 2; tarsus 0·92; irides deep brown; legs black.

*Hab.*—Kurrachee (Sind), Beloochistan Coast, Persia, Ceylon, Kutch, Guzerat, Concan and South India, also the Laccadives, the West Coast, and the Irrawaddy delta. In the Kurrachee harbour extremely abundant, associated with the Stints on the sea-shore.

## Sub-Family PHALAROPINÆ.

Bill straight, curved at the tip; tarsi short; toes lobed on the sides, united at the base; hind toe edged with narrow membrane.

### Gen. Phalaropus.—*Briss.*

Bill long; 1st and 2nd quills of wing longest.

**167. Phalaropus hyperboreus** (*Linn.*), *Edw. B.* pl. 143; *Bodd.*, *Tab. P. E.* 766; *Gould, B. Eur.* pl. 336; *Jerd.*, *B. Ind.* iii. p. 696; *Str. F.* i. 246; ii. 338; v. 290; vii. 487; *Murray, Hdbk., Zool., &c., Sind*, p. 221; *id.*, *Vert. Zool., Sind*, p. 253; *Murray, Avif. Brit. Ind.* ii. p. 617, No. 1298.—The LESSER COOT-FOOTED STINT or the RED-NECKED PHALAROPE.

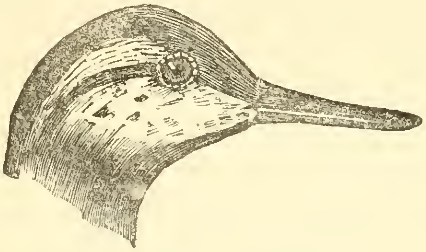
Crown, back of neck and nape dark lead or slaty; in winter the forehead is white, tinged with grey; the streak over the eye, and the crown and nape are blackish grey; the neck on the sides is fine yellowish red, which in winter wears away into white, with sometimes a tinge of purple; in front dark grey with a white edging; chin white; throat fine yellowish red, and in winter white,

with a slight tinge of pink; breast white, with some streaks below on the sides of a pale ash colour, and in winter with a faint blush of purple red; back dark or blackish lead colour, the feathers with a margin of ash grey and brownish yellow; greater wing coverts dark lead colour, tipped with white, forming a distinct bar across the wing in winter; lesser wing coverts dark lead colour; primaries very dark brown, black in winter; secondaries margined with reddish yellow on the outer web, which in the winter plumage is white; tail brownish grey margined with white, the two middle feathers darkest, nearly black; under tail coverts white; legs and toes dusky greenish grey; claws black; lores dusky greenish.

*Length.*—7·25 inches; wing 4·25; expanse 14·0; tail 2·19; bill at front 0·81.

*Hab.*—Kurrachee, Mekran Coast and Persian Gulf, also Afghanistan. On the Continent of Europe it occurs in France, Holland, Germany, Italy and Sweden.

168. **Phalaropus fulicarius,** *Linn., Syst. Nat.* i. p. 737; *Jerd., B. Ind.* iii. p. 695; *Str. F.* i. p. 245; vii. p. 487; *Murray, Avif. Brit. Ind.* ii. p. 618, No. 1299.—The Coot-footed Stint.



Head of Phalaropus fulicarius.

*Winter Plumage.*—Forehead and crown white; occiput, ear coverts, and a streak from the nape of the neck, dusky grey; back, scapulars and rump bluish ashy, the shafts of the feathers dusky; wing coverts tipped with white, forming two bars across the wing; tail dusky grey, the feathers edged with cinereous; throat, sides of the neck, middle of breast and all the under parts white; the sides of the breast ashy; a black patch under the eye. Bill yellowish red at base, dusky brown at tip; irides reddish yellow; legs greenish grey.

*Length.*—8·5 inches; wing 5; tail 2·5; bill at front 0·8; tarsus 0·8.

In Summer the crown of the head and throat are black, the sides of the head white, a black streak behind the eye, neck, breast and belly, also the vent, ferruginous, with vinous reflections; back dusky, with reddish yellow webs; lesser wing coverts dark ash, slightly edged with white; greater coverts the same, broadly tipped with white, forming an oblique double bar across the

wing; tertiaries black, with pale edges; primaries and tip of tail black; legs and toes dingy yellow.

*Hab.*—Europe and Asia. In India only found as yet in Bengal along the coast.

## Sub-Family, TOTANINÆ.—Sand-Pipers.

Bill grooved as far as, or beyond, the middle, moderately long, the tip hard and pointed; nostrils narrow; hind toe long and slender, barely reaching the ground. All are found on mud banks, the mouths of rivers, marshes, &c., and feed on molluscs and insects. The flesh is excellent food.

### Gen. Actitis.—*Ill.*

Groove of the bill extending quite to the tip; 1st quill of wing longest.

**169. Actitis hypoleucos** (*Linn.*), *Jerd.*, *B. Ind.* iii. p. 699, No. 893; *Blyth*, *B. Burm.* p. 155; *Murray*, *Vert. Zool.*, *Sind*, p. 253; *Murray*, *Avif. Brit. Ind.* ii. p. 619, No. 1300. Tringa hypoleucos, *Linn.*, *Syst. Nat.* I, p. 250. Tringoides hypoleucos, *Hume*, *Nests and Eggs Ind. B.* p. 588; *id.*, *Str. F.* ii. p. 299; iii. p. 183; *Salvad.*, *Ucc. Born.* p. 326; *Hume*, *Str. F.* viii. p. 113; *Legge*, *B. Ceylon*, p. 867; *Oates*, *Str. F.* x. p. 241. Totanus hypoleucos, *Dresser*, *B. Eur.* viii. p. 127; *Bingham*, *Str. F.* ix. p. 197.—The Common Sand-Piper.

Forehead, crown, nape and back of the head ashy brown, streaked with dark narrow lines; supercilium white, also the orbital ring, chin and throat; sides of the face pale ashy with brown streaks; middle of the breast white, the sides mottled or streaked with brown, or entirely brown; back, scapulars, tertiaries and lesser wing coverts ashy brown, glossed with green, and with fine transverse dark lines; greater wing coverts ashy brown, tipped with white, which with the white bases of the secondaries form a conspicuous wing band; primaries and their coverts dark brown, the latter tipped with white, and all, except the first primary, and sometimes the second also, with a large white spot on their inner webs; lower back, rump and upper tail coverts ashy brown, with dark transverse bars; four central feathers of the tail like the back, the rest tipped with white and with dark spots along their edges; beneath white. Bill dusky; irides brown; legs pale green.

*Length.*—7 to 8 inches; wing 4·5; tail 2·4; tarsus 0·97 to 1; bill 0·97.

*Hab.*—Less common than the two preceding; affects the sea coast as well as lakes, &c., inland. Occurs throughout India, Burmah, Malacca, Ceylon, &c.; also Beloochistan, Persia and Afghanistan.

**170. Actitis ochropus** (*Linn.*), *Jerd.*, *B. Ind.* iii. p. 698, No. 892; *Blyth*, *B. Burm.* p. 155; *Murray*, *Vert. Zool.*, *Sind*, p. 254; *Murray*, *Avif. Brit. Ind.* ii. p. 619, No. 1301. Tringa ocrophus, *Linn.*, *Syst. Nat.* i. p. 250. Totanus ochropus, *Hume*, *Str. F.* iii. p. 183; *Dresser*, *B. Eur.* viii. p. 135, pl.; *David et Oust. Ois. Chine*, p. 465; *Hume and Dav.*, *Str. F.* vi.

p. 462; *Legge, B. Ceylon* p. 862. Helodromas ochropus, *List., Br. B. Brit. Orn. Union.*; *Oates, B. Br. Burm.* ii. p. 400.—The Green Sand-Piper.

In winter plumage the forehead, crown, nape and back of the neck are deep or dusky brown, the feathers streaked with white; a dark streak from the base of the bill to the eye and a white one above it; chin and throat white; back and scapulars olive brown, or brown glossed with greenish, each feather edged with small roundish spots, the spots on the scapulars distinctly margined behind with deep brown; primaries and their coverts and secondaries deep brown, none of them white-shafted; wing coverts dusky brown; *axillaries dusky or dark brown, with narrow oblique white bars*; abdomen, vent and upper and under tail coverts white; tail white, broadly barred with deep brown, the middle feathers having four bars, and those next to them decreasing in number, the outer feathers on each side being pure white with sometimes a dusky subterminal spot on the outer web; legs and feet greenish grey; bill black; irides brown.

*Length.*—9·5 to 10 inches; wing 5·5 to 6; tail 3; bill 1·37; tarsus nearly 1·5.

*Hab.*—Throughout India, Ceylon, Beloochistan, Persia and Afghanistan, frequenting the banks of rivers, edges of lakes and large sheets of water; a winter visitant, seldom seen along the sea coast. Occurs throughout Europe, Asia and Africa, extending to Burmah and the Malay Peninsula.

## Gen. **Totanus**.—*Bech.*

Bill slightly curved at tip, groove half the length of the bill; tarsi with narrow scales in front, otherwise as in *Actitis*.

**171. Totanus glareola** (*Gm.*), *Salvad., Ucc. Born.* p. 327; *Hume, Str. F.* iii. p. 183; *Dresser, B. Eur.* viii. p. 143, pl.; *Legge, B. Ceylon* p. 857; *Murray, Avif. Brit. Ind.* ii. p. 620, No. 1302, Tringa glareola, *Gm., Syst. Nat.* i. p. 677. Actitis glareola, *Jerd., B. Ind.* iii. p. 697; *Blyth, B. Burm.* p. 155. Rhyacophila glareola, *Hume and Dav., Str. F.* vi. p. 462; *Hume, Str. F.* vii. p. 488; viii. p. 113; *Oates, Str. F.* x. p. 240.—The Wood Sand-Piper.

*Winter Plumage.*—Crown of the head, forehead, nape and back of the neck dusky brown, the feathers with narrow white or greyish edgings; a dark streak from the base of the bill to the eye, and a white one above it; chin and throat rather sullied; foreneck and breast the same, but suffused with ashy brown, darker on the sides, where the feathers are indistinctly dark shafted: back, scapulars and tertials dusky, the feathers edged with white or greyish white spots; axillaries white, with transverse oblique dusky brown spots; primaries, secondaries and their coverts dusky brown, the shaft of the first quill and the tips of the later inner ones white; the greater wing coverts margined and tipped with white; rump, upper and lower tail coverts and abdomen white; tail with the central feathers longest and barred with black and white alternately,

the barrings oblique, the rest less broadly barred and decreasing on the outer ones to dusky markings on the outer webs only; legs pale olive green; irides deep brown.

*Length.*—8·5 to 9 inches; wing 5; tail 2; bill at front 1·2; tarsus 1·5.

*Hab.*—Common nearly throughout India and Ceylon, also in Beloochistan, Persian Gulf, and Afghanistan during winter.

**172. Totanus canescens** (*Gmel.*), *Dresser, B. Eur.* viii. p. 173, pl.; *Hume, Str. F.* i. p. 247; iii. p. 183; *Armstrong, Str. F.* iv. p. 344; *Oates, B. Br. Burm.* ii. p. 402; *Murray, Avif. Brit. Ind.* ii. p. 621; No. 1303. Scolopax totanus, *Linn., Syst. Nat.* i. p. 245. Scolopax canescens, *Gmel., Syst. Nat.* i. p. 668. Totanus glottis (*Linn.*), *Jerd., B. Ind.* iii. p. 700; *Blyth, B. Burm.* p. 155; *Legge, B. Ceylon*, p. 840; *Murray, Vert. Zool. Sind*, p. 255.—The Green Shanks.

In winter the forehead, except a few brown streaks in the middle, sides of the face, chin, throat, neck in front, and entire lower parts, including the under tail coverts, are white, also the lower back, rump and upper tail coverts; a dark streak from the base of the bill to the eye; crown of the head, sides of the neck and nape dusky, the feathers streaked whitish or greyish white; sides of the breast white, mottled with ashy brown; upper back and scapulars brown, the feathers edged whitish; scapulars distinctly dark shafted, also the tertiaries; primaries dark brown, the shaft of the first quill white, and the edges and tips of the inner ones also white; secondaries ashy brown, tipped white; tail white with narrow transverse dark bars, the outer ones nearly pure white; bill slightly curved upwards, dusky greenish, 2·2 in length; irides brown.

*Length.*—14 to 14·5 inches; wing 2·2; tail 3·75; tarsus 2·75.

*Hab.*—India generally during winter, also Burmah and Ceylon, along the sea coast, lakes, rivers, &c. Widely distributed. Recorded from N.-E. Europe, Red Sea, Africa and Australia. Like all the *Totaninæ* it is excellent eating.

**173. Totanus stagnatilis**, *Bechst., Orn. Taschenb.* ii. p. 292; *Jerd., B. Ind.* iii. p. 701; *Dresser, B. Eur.* viii. p. 151, pl.; *Blyth, B. Burm.* p. 155; *Hume, Str. F.* viii. p. 113; *Murray, Vert. Zool. Sind*, p. 255; *Legge, B. Ceylon* p. 844; *Oates, B. Br. Burm.* ii. p. 403; *Murray, Avif. Brit. Ind.* ii. p. 621, No. 1304—The Little Green Shank.

In winter the plumage of the upper parts are the same as *Totanus glottis*; shoulder of the wing black; entire under parts white; sides of the breast not so much spotted or streaked with dark brown; bill not curved upwards as in *glottis*; tail banded white and dusky.

*Length.*—10·5 inches; wing 5·25; tail 2; bill 1·62; tarsus 2·25; legs pale green irides brown.

*Hab.*—The same as *glottis* and usually associated with it.

**174. Totanus calidris** (*Linn.*), *Jerdon, B. Ind.* ii. p. 702; *Hume, Str. F.* i. p. 248; ii. p. 299; *Blyth, B. Burm.* p. 155; *Dresser, B. Eur.* viii. p. 157, pl.; *Hume, Str. F.* viii. p. 113; *Legge, B. Ceylon* p. 852; *Murray, Vert. Zool. Sind,* p. 256; *Oates, B. Br. Burm.* ii. p. 404; *Murray, Avif. Brit. Ind.* ii. p. 622, No. 1305. Scolopax calidris, *Linn., Syst. Nat.* i. p. 245.—The Red Shank.

*Winter Plumage.*—Forehead, crown, nape, back of the neck, upper back and scapulars cinereous or glossy olive brown, the feathers on the back and scapulars dark shafted; supercilium and orbital ring white; chin and throat white; sides of the face greyish white, with narrow brown streaks; neck in front and breast greyish white, with dusky or greyish brown linear markings; primaries dusky, their inner webs white; the first quill white shafted, and some of the inner ones white tipped; secondaries white; tertials like the back; wing coverts olive brown, the greater ones tipped with white; axillaries, under wing coverts, abdomen, vent and under tail coverts white; lower back white; upper tail co erts and tail white, barred with dusky.

*Length.*—11·5 inches; tail 2·7; wing 6·45; bill at front 1·7 to 1·9, reddish at the base, its terminal half dark brown; tarsus 2; irides brown; legs red.

*Hab.*—India generally and Ceylon during winter. Sind, Persia, Beloochistan and Afghanistan, Southern and Western India, N.-W. Provinces, Oudh, and Burmah generally. Breeds in the North of Europe.

**175. Totanus fuscus** (*Linn.*), *Jerd., B. Ind.* iii. p. 702, No. 896; *Hume, Str. F.* i. p. 248; *Dresser, B. Eur.* viii. p. 165, pl.; *Cockburn, Str. F.* iv. p. 509; *Hume, Str. F.* viii. p. 113; *Legge, B. Ceylon* p. 848; *Murray, Vert. Zool. Sind,* pp. 255, 256; *Murray, Avif. Brit. Ind.* ii. p. 622, No. 1306.—The Spotted Red Shank.

In winter the forehead, crown, nape, back of neck and upper back ashy grey, finely streaked with dusky; supercilium white, and a dusky streak from the base of the bill to the eye; chin and throat white, sides of face white with some fine dusky streaks; breast and under parts mottled and barred with dingy ash brown and dull fulvous, or greyish white; upper back, scapulars, shoulder of wing and lesser coverts a glossy olive brown, darker on the upper back and tertiaries, all the feathers spotted on the edges with white; the wing coverts also tipped with white; lower back white; rump barred with undulating lines of ashy brown and white; tail also barred the same; primaries dark brown, the inner ones pale brown, tipped and mottled with white; secondaries barred white and pale brown; legs deep orange red; bill blackish, orange at the base beneath.

*Length.*—13 inches; wing 6·75; tail 2·5; tarsus 2·8; bill 2·4.

*Hab.*—Throughout India during winter, also the Province of Burmah and Ceylon; usually solitary or in very small parties. It is a sea shore bird, but is

also found on the edges of rivers, lakes, mud banks, &c. It is said to swim well, and also to dive when in danger.

**176. Totanus Haughtoni,** *Str. F.* iv. p. 344; *Hume and Dav., Str. F.* vi. p. 463; *Harting, Ibis,* 1883, p. 133, pl.; *Oates, B. Br. Burm.* ii. p. 466; *Murray, Avif. Brit. Ind.* ii. p. 623, No. 1307. Pseudototanus Haughtoni, *Hume, Str. F.* vii. p. 113; *Hume and Marsh., Game Birds* iii. p. 404 pl.; *Oates, Str. F.* x. p. 241.—ARMSTRONG'S YELLOW SHANK.

In winter plumage, resembles generally *Totanus canescens*, but has a much broader and more massive bill, a much stronger tarsus (male 1·85; female 1·65), and the webs between the three anterior toes very much more developed. It differs from *T. canescens* in its smaller size, more robust bill, with the lateral groove slightly more prolonged in proportion to the length of the bill, and in having a palmation on both sides of the middle toe instead of on one side only; the tail does not extend beyond the end of the closed primaries. (*Hume and Harting.*)

*Hab.*—Sea coast near Elephant Point and at Amherst in Tenasserim. One was seen in the Calcutta market.

**177. Totanus dubius,** *Murray, Vert. Zool. Sind,* p. 256; *Murray, Avif. Brit. Ind.* ii. p. 623, No. 1308—The ALLIED YELLOW SHANK.

*Female.*—Frontal zone greyish white, the feathers with mesial narrow brown streaks; crown of the head cinereous, the feathers edged with greyish white; an indistinct dusky spot between the base of the bill and the eye, and a white supercilium; chin and throat white; neck in front and on the sides greyish white, the feathers with narrow mesial dusky streaks; back of the neck ashy grey, also with mesial narrow dusky streaks; breast greyish white with dusky spots, which become linear lower down and on the sides and flanks, forming interrupted lines; abdomen and under tail coverts white; upper back, scapulars and tertials ashy brown, the feathers dark shafted; the tertials reach beyond the fourth quill, and are edged and tipped with fulvous white; *primaries dark brown, nearly black, paler on their inner webs, and all white shafted, except at their tips;* secondaries ashy grey, white-shafted and margined and tipped with white; greater, median and lesser coverts ashy grey, the feathers dark-shafted and edged and tipped with white, more broadly on the median and lesser wing coverts; first two rows of feathers on the shoulder earthy brown, edged rufescent; axillaries and thigh coverts white; lower back and rump dusky brown, the feathers edged and tipped with white; upper tail coverts the same, but the brown very much paler; tail pale earthy brown, the feathers with distinct pale margins and tips, the central feathers very slightly darker; tarsi short, 1·37 inches; toes slender, fringed on the sides and webbed about $\frac{1}{8}$ inch; mid-toe and claw 1·12; tail from vent 2·62; bill at front 1·62; upper mandible slightly the longer and bent over at the tip; wing 7·12, 1st quill longest; irides dark brown.

*Length.*—About 11·5 inches (mounted specimen); legs and feet greenish yellow. This is either a new species or an aberrant form of *Totanus*. It is quite unlike any of the other species, except *Totanus Haughtoni*, with the figure of which in the April number of the *Ibis*, 1883, pl. iv., it agrees in a few characters. The markings of the breast and upper parts agree very well, but the lower back, rump and upper tail coverts are not white as in that species or form. These are dusky with whitish edges and tips. Again in the webbing of the toes, this Kurrachee specimen differs from *T. Haughtoni* in having only one-eighth inch of a web, the fringe however is quite apparent. The palatal recurved horny papillæ referred to by Mr. Hume are also present.

In measurements however there is a wide difference. Mr. Hume gives:—

| | Length. | Expanse. | Wing. | Tail. | Tarsus. | Bill at gape. | Bill at front. |
|---|---|---|---|---|---|---|---|
| *Male*......... | 13·2 | 22·25 | 7·3 | 3·0 | 1·85 | 2·5 | 2·1 |
| *Female* ... | 12·9 | 22·3 | 7·0 | 3·0 | 1·65 | 2·2 | 1·92 |

The Kurrachee specimen is a female and measures—

| | Length. | Expanse. | Wing. | Tail. | Tarsus. | Bill at gape. | Bill at front. |
|---|---|---|---|---|---|---|---|
| | 11·5 | ........... | 7·12 | 2·6 | 2·37 | 1·75 | 1·62 |

These measurements, it will be seen, will not fit any of the other species of the genus.

*Hab.*—Kurrachee (Sind) in the harbour during winter. The single specimen was obtained in November 1882.

## Gen. Terekia.—*Bonap.*

Bill recurved, long, slender; tarsi short; toes narrowly webbed; hind toe less than half the size of the outer one.

**178. Terekia cinerea**, *Guldenst.*, *N. Comm. Soc. Imp. Petrop.* xix. p. 473, t. xix; *Jerd.*, *B. Ind.* iii. p. 682, No. 876; *Dresser*, *B. Eur.* viii. p. 195, pl.; *Hume*, *Str. F.* i. p. 237; ii. p. 296; *Armstrong*, *Str. F.* iv. p. 341; *Hume and Dav.*, *Str. F.* vi. p. 460; *Legge*, *B. Ceylon* p. 836; *Murray*, *Vert. Zool.*, *Sind*, p. 246; *id.*, *Avif. Brit. Ind.* ii. p. 624, No. 1309.—The Terek Sand-Piper or Pigmy Curlew.

Forehead, chin, throat, sides of the head and neck in front greyish white; with ashy striæ; back, scapulars, tertials, rump and upper tail coverts ashy brown, the feathers with dark shafts; feathers of the median wing coverts narrowly tipped with white; primaries dark brown, the 1st quill with a white shaft; secondaries dusky, broadly terminated with white; shoulder and edge of the wing dark brown; tail concolorous with the back, the tips bordered with white; sides of the breast ashy grey, the feathers mesially darker; lower breast, abdomen, vent and under tail coverts white. In an advanced stage of plumage—March—the entire upper parts are darker, the scapulars are

terminated with black, the chin and throat become pale ashy grey, and there is a distinct fulvous orbital ring, the forehead and face become fulvescent, and the inner primaries tipped with white.

*Length.*—10 inches; wing 5 to 5·2; bill at front 1·9 to 2, orange at the base, the rest dusky or dark brown; tail 2 to 2·5; legs and feet pale orange; irides brown.

*Hab.*—Sind, the Mekran Coast, Kutch, Kattiawar, N. Guzerat, Northern and Southern India, Burmah and Ceylon generally, affecting the sea coast, creeks and channels during winter, found also in N.-E. Europe and New South Wales. According to Jerdon it breeds in Northern Asia, and is extensively distributed over Europe, Asia and Australia.

### **Sub-Family,** LIMOSINÆ.—Godwits.

Bill much lengthened, curved or straight from the base, or turned upwards; tail short and even; toes long, united at the base.

### Gen. **Pseudoscolopax.**

Bill much lengthened, soft at the tip, straight or slightly turned upwards, mostly of large size; a distinct web between the toes; lower part of tibia bare; scapulars long; tail moderate.

**179. Pseudoscolopax semipalmatus** (*Jerd.*), *Swinh., P. Z. S.* 1863, p. 313; 1871, p. 407; *David et Oust. Ois Chine*, p. 474, pl. 121; *Hume, Str. F.* viii. p. 112; *Hume and Marsh., Game Birds* iii. p. 395. pl.; *Oates, Str. F.* x. p. 239; *id., B. Br. Burm.* ii. p. 408; *Murray, Avif. Brit. Ind.* ii. p. 625, No. 1310. Macroramphus semipalmatus (*Jerd.*), *Blyth, J. A. S. B.* xvii. p. 252; *Jerd., B. Ind.* iii. p. 679, No. 874; *Hume, Str. F.* vii. p. 484.—The Snipe-billed Godwit.

Forehead, crown, nape, hind neck, sides of the neck, back, scapulars and tertiaries brown, each feather margined with greyish white; lores brown; supercilium white; sides of the head, chin, throat, foreneck and breast white, densely marked with short brown streaks; upper wing coverts dark brown, broadly edged with white; primary coverts brown; primaries brown, the tips darker, the shafts white and the outer webs narrowly margined with white; secondaries brown, broadly margined with white and irregularly barred with the same; rump, upper tail coverts and tail white, broadly barred with brown; abdomen and vent white; under tail coverts white, marked with V-shaped brown marks; sides of the body white, irregularly barred with brown; under wing coverts white; axillaries white, with a few irregular short brown bars.

In Summer, according to Messrs. David and Oustalet, the upper plumage is bright rufous with brown streaks on the nape, lores and hind neck, and with

large brown spots on the dorsal feathers; lower plumage more uniform rufous, with a little white on the edges of the feathers of the abdomen and some irregular brown streaks on the flanks and under tail coverts; wing coverts, secondaries and tertiaries greyish brown bordered with white; primaries brown with the shafts white; tail brown, transversely banded with white.

Bill black, turning to plumbeous at base; irides dark brown; legs and toes dark plumbeous.

*Length.*—13·5 inches; tail 2·5 to 2·9; wing 6·8 to 7; tarsus 2·05; bill from gape 2·9 to 3·25.

*Hab.*—Burmah, where it was procured at Rangoon and in Pegu.

### Gen. **Limosa**, *Briss.*

Bill sub-curved at the tip, inclined upwards; 1st quill longest; outer toe united to the middle as far as the first joint; tibia bare for more than two-thirds its length; tarsi long; hind toe half the length of the outermost.

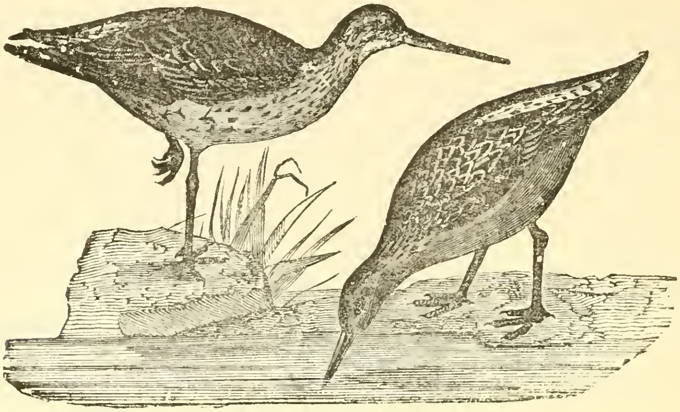
**180. Limosa ægocephala** (*Linn.*), *Jerd.*, *B. Ind.* ii. p. 681; *Dresser*, *B. Eur.* viii. p. 211; *Blyth*, *B. Burm.* p. 155; *Hume*, *Str. F.* vii. p. 356; *Legge*, *B. Ceylon*, p. 832; *Hume and Marsh.*, *Game Birds* iii. p. 409, pl.; *Oates*, *Str. F.* x. p. 239; *Murray*, *Vert. Zool. Sind*, p. 243; *Oates*, *B. Br. Burm.* ii. p. 409; *Murray*, *Avif. Brit. Ind.* ii. p. 626, No. 1311. —The Black-tailed Godwit.

In winter plumage, the entire head, back of the neck, back, scapulars and breast pale earthy grey, darker on the scapulars and back, where each feather is dark shafted; superciliary stripe, chin, throat, also the abdomen and under tail coverts white; rump white, the feathers of the upper tail coverts black for their terminal half; tail white at the base, the terminal two-thirds tipped black, the outer feathers for their terminal third only, and all more or less narrowly tipped white; primaries and their coverts dusky brown, the inner primaries basally white, and all white on their inner webs; secondaries dusky terminally, white basally, and some of the tertials with their outer webs white; greater wing coverts broadly edged with white, also some of the hinder primary coverts; shoulder of wing dusky brown, also the lower back; neck in front and flanks greyish white.

*Length.*—16 to 18 inches; wing 7·75 to 8·75; tail 3·12 to 3·5; bill at front 3·7 to 4·5, of a dull reddish colour at base and dusky at the tip; legs dusky greenish; irides dark brown.

*Hab.*—Nearly throughout India and Ceylon during winter. Rare in Southern India, the Concan and the Deccan. Common in Kutch, Kattiawar and Rajputana, also in Beloochistan, Persia and Afghanistan. In Sind this

species is numerous, everywhere behind the tall grass, along the edges of the Munchur Lake, in the shallow pools, wading up to their body, and often swimming across deeper spots if beyond its standing depth. It is held in much esteem for the table, being equal to Jack and the Common Snipe, especially those which have been feeding in rice fields.



Limosa lapponica.

**181. Limosa lapponica** (*Linn.*), *Bodd., P. E.* 900; *Gould, B. Eur.* pl. 306; *Hume, Str. F.* i. p. 236; *Murray, Hdbk., Zool., &c., Sind,* p. 216; *id., Vert. Zool. Sind,* p. 244; *Hume and Marsh., Game B.* p. 47, pl.; *Murray, Avif. Brit. Ind.* ii. p. 627, No. 1312.—The Bar-tailed Godwit.

"In the winter plumage there is a broad indistinct white superciliary band, and the feathers immediately below the eye are also white; the chin and throat are pure white; forehead, the whole top, back and sides of the head, and the neck all round brownish white, closely streaked with darker brown, the streaks very minute on the sides of the head, somewhat larger on the front of the neck, and darker and stronger on the head and back of the neck, where but little of the white remains visible; upper back pale earthy brown, each feather with a narrow dark brown central shaft-stripe and mostly margined somewhat paler; breast pale greyish brown, more or less obscured by the albescent tippings to the feathers, and some of the feathers with inconspicuous darker shafts; the feathers of the central portion of the breast, if raised, will be found to be not merely tipped whitish, but to be also obscurely barred with white; abdomen, vent, and lower tail coverts pure white, as are also the axillaries and wing lining; the rump is white with a few cuneiform or heart-shaped blackish brown spots; upper tail coverts white, with narrow irregular arrow-head bars; tail feathers grey brown with

dark shafts, tipped white and mottled with white on the inner webs of the exterior ones, in some with traces of darker transverse bars; the primaries and their greater coverts black; the shafts of the first two or three white, subsequent ones brownish white; scapulars and tertiaries pale brown, darker shafted, margined paler, and many of them more or less tinged with ashy; the lesser and median coverts like the scapulars, but margined whitish; secondaries brown, paler on their inner webs, and margined on both webs and on the tips with white, as indeed are also, so far as the tips are concerned, the later primaries, though less conspicuously so; the greater secondary coverts are more ashy brown, narrowly margined with white. In one specimen, which appears to be further advanced, the lateral tail feathers are distinctly barred blackish brown and white; the cuneiform barrings on the rump and upper tail coverts are more marked; the axillaries are all strongly barred; the feathers of the sides and flanks, and also the lower tail coverts, exhibit numerous arrow-head bars; and one or two rufous or chestnut feathers with black bars have begun to show themselves on the breast."

The summer plumage is thus described by Temminck:—

"*Male.*—Upper part of the head and occiput blackish brown, mixed with streaks of reddish yellow; a band of the latter colour over the eyes; lores blackish brown; cheeks and throat of a yellowish red; all the lower parts of the body including the under tail coverts pale yellowish red; upper part of the back and scapulars blackish brown, marbled with reddish yellow and whitish grey; lower part of the back and rump white, marked with longitudinal yellowish red spots; the tail marked with brown and white bars, those of the latter tint irregularly distributed, and disposed more or less longitudinally; quills black at their tips, the remaining part towards the bases blackish brown, with their inner webs whitish grey, marbled with pale brown; the secondaries grey, with the shafts and margins white.

"*Female.*—The head and lores as in the male; the throat white, marked with reddish grey; cheeks and neck very light reddish, with numerous brown streaks, which become broader, and form small transverse brown and white bars on the sides of the breast; the latter and the belly marbled with white and very pale reddish; the abdominal part white; the lower tail coverts reddish white, with light brown bars.

"*Length of Male.*—14·5 to 14·8 inches; expanse 27 to 27·75; tail from vent 2·7 to 3·3; wing 7·8 to 8·4; tarsus 2; bill at front 2·8 to 3·1; weight 8 oz.

"*Length of Female.*—15·75 inches; expanse 28; tarsus 2; tail 3; wing 8·4; bill at front 3·65; weight 9 oz.

"The legs and feet are black, in some dusky plumbeous; irides brown; bill pinkish for about the basal half, black or dusky on the terminal half."—(*Hume, Str. F.*, vol. i. p. 236.)

Affects the same situations as the last, but is less restricted in its range, being found in Sind, Beloochistan, Mekran Coast and the Persian Gulf.

## **Sub-Family**, NUMENINÆ.

Bill very long, slender, arcuate and compressed, with the tip hard and rather obtuse.

### Gen. **Numenius**.—*Linn.*

Characters same as those of the Sub-Family; bill curved from the base upper mandible slightly the longer; tarsi narrowly scutate transversely; hind toe slender with a rudimentary nail.

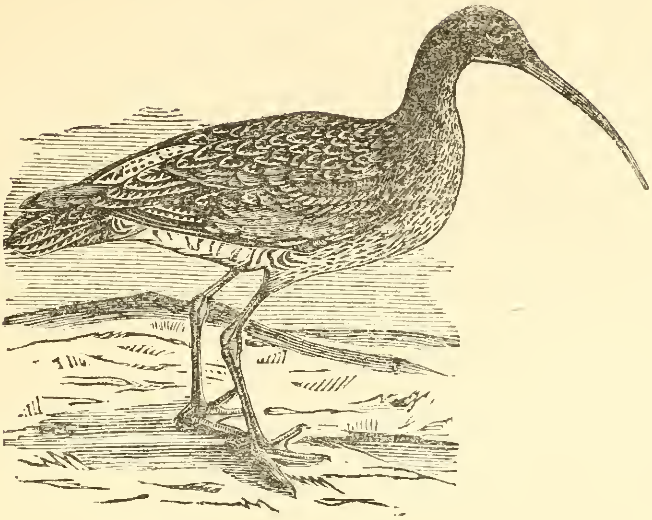
**182. Numenius phæopus** (*Linn.*), *Jerd.*, *B. Ind.* iii. p. 684; *Dresser*, *B. Eur.* viii. p. 227, pl.; *Hume*, *Str. F.* ii. p. 297; iii. p. 182; *Blyth*, *B. Burm.* p. 155; *Hume*, *Str. F.* viii. p. 112; *Legge*, *Birds Ceylon*, p. 910; *Oates*, *Str. F.* x. p. 240; *Murray*, *Vert. Zool. Sind.*, p. 247; *Oates*, *B. Br. Burm.* ii. p. 411; *Murray*, *Avif. Brit. Ind.* ii. p. 629, No. 1313. Scolopax phæopus, *Linn.*, *Syst. Nat.* p. 243.—The WHIMBREL.

Forehead and crown dusky brown with a mesial longitudinal streak; lores dark brown; superciliary stripe white, extending from the upper side of the upper mandible; orbital feathers white; chin and throat white; neck in front and behind, and breast, ochreous white, the feathers with a dark central longitudinal streak; flanks, axillaries and under wing coverts white, barred with pale brown, as also are the rump and upper tail coverts; tail brown, brownish white or grey brown, with 6—7 bars of dark brown; lower back white; upper back, scapulars and wing coverts dusky or deep brown, the feathers edged pale white or dirty fulvous; primaries dusky or dark brown, their inner webs as well as both webs of the secondaries with white bars, not reaching the shaft.

*Hab.*—Throughout most parts of India, Burmah and Ceylon; also Europe, N. Africa, Egypt and Abyssinia.

Affects the same situations as the Curlew, in small flocks. In the Kurrachee harbour it is oftener seen than the Curlew, and is more shy and difficult to approach, but unlike the Curlew it is often seen on open barren tracts, or sandy flats, far inland, in flocks of 3, 4 or half-a-dozen. It is common all along the sea coast, mud banks and sandy islands of estuaries of rivers, or of the sea, and like the Curlew is a fine bird for the table; Jerdon says it is

perhaps better than the Curlew, and has been called the "Woodcock" of Bengal.



Numenius arquatus. The Curlew.

**183. Numenius arquatus** (*Linn.*), *Jerd.*, *B. Ind.* iii. p. 683, No. 877; *Dresser, B. Eur.* viii. p. 243, pl.; *Hume, Str. F.* iii. p. 182; *Murray, Vert. Zool., Sind.* p. 247; *Oates, B. Br. Burm.* ii. p. 412; *Murray, Avif. Brit. Ind.* ii. p. 630, No. 1314. Scolopax arquata, *Linn., Syst. Nat,* 1, p. 242. Numenius lineatus, *Cuv., Regn. Anim.* 1, p. 521; *Blyth, B. Burm.* 1, p. 155; *Legge, B. Ceylon* p. 906.—The Curlew.

Head, neck behind and in front, also the breast, rufescent ashy, or rufescent grey brown, the feathers with dark mesial longitudinal shaft-streaks; upper back and scapulars varying from dusky to dark brown, the feathers broadly edged fulvous or pale rufous; upper abdomen white, the feathers with dusky shaft-streaks; lower abdomen, vent and under tail coverts pure white; lower back white; rump and upper tail coverts also white, with dark shafts; tail fulvous white with transverse brown bars; chin and throat white, also a small space above the eye in some specimens; first five primaries and edge of wing dark brown, their inner webs mottled with white; secondaries dusky brown, with transverse white bars on both webs half across only, the dark markings forming a rude saw, the edges and tips of the feathers white.

*Length.*—21 to 26 inches; wing 12 to 12·5; tail 4·5; bill at front 5 to 7·25; irides dark brown; legs and feet bluish grey.

*Hab.*—Throughout most parts of Europe, India, Burmah, Ceylon, N. Africa, Egypt, Abyssinia and Palestine. Common along the sea coast and back

waters in great numbers during winter; also along the banks of the Indus and Punjab rivers, and on all large inland sheets of water.

### Gen. **Ibidorhynchus**,—*Vigors.*

Bill long, slender, well curved, scarcely dilated at tip, upper mandible grooved; tomiæ inflexed and denticulated; nostrils wide, linear, basal; wings long, 1st quill longest; tail short, of 12 feathers; tarsi short, bare; hind toe wanting.

**184. Ibidorhynchus Struthersii** (*Vigors*), *Gould, Cent. Him. B.* pl. 19; *Hodgs., J. A. S. B.* iv. p. 459; *Jerd., B. Ind.* iii. p. 685, No. 879; *Hume, Str. F.* iii. p. 257; *Murray, Avif. Brit. Ind.* ii. p. 631, No. 1315. Clorhynchus strophiatus, *Hodgs., J. A. S. B.* iv. p. 761.—The Red-billed Curlew.

Whole head as far as the eyes black, the feathers of the forehead edged with greyish white; rest of the upper plumage, including the nape, wings and tail bluish ashy; winglet and primaries slaty blue; a bar of white across the wings; upper tail coverts nearly ashy brown; tail with the feathers barred with dusky black, all except the two central feathers largely tipped with black; outer web of outermost feather white; chin and throat black; neck ashy; a gorget of black on the breast; under surface of body, under wing and tail coverts white.

Bill deep crimson; irides red; legs blood red. (*Jerd.*)

*Length.*—16·5 inches; wing 9·25; tail 4·5; tarsus 2·2; bill 3·75.

*Hab.*—The Himalayas, on the banks of sandy streams in Nepaul and in Sikkim on the Great Runjeet; also in Ladak.

## **Sub-Family** RECURVIROSTRINÆ.—*Bp.*

Nostrils narrow, membranous; tail short and rounded; tarsi long, covered with reticulated scales; bill long and slender, recurved in one genus.

### Gen **Recurvirostra.**—*Linn.*

Bill long, thin, the keel flattened, the tips turned upwards; toes united by webs; hind toe short.

**185. Recurvirostra avocetta** (*Linn.*), *Bodd., P. E.* 353; *Gould, B. Eur.* pl. 289; *Jerd., B. Ind.* iii. p 248; *Murray, Hdbk., Zool., &c., Sind,* p. 222; *id., Vert. Zool. Sind,* p. 258; *Murray, Avif. Brit. Ind.* ii. p. 631, No. 1316.—The Avocet, Scooper or Crooked-Bill.

Forehead in some specimens faintly white, otherwise black; crown, lores, nape and back of the neck black; scapulars, lesser wing coverts and upper tertials black; primaries black, some of the inner ones with their inner webs white; secondaries and some of the tertials white; chin, throat, neck in front, lower neck behind, lower back, rump, upper tail coverts and entire under surface white.

*Length.*—17 to 18 inches; bill 3·5, curved upwards, black; wing 8·5; tail 3; tarsus 3·62; irides red brown; legs pale bluish grey.

*Hab.*—Throughout India during winter; S.-E. Europe, Lower Egypt, Senegal and Persia. Common in Sind, in large flocks inland, on almost every large sheet of water, especially on the Munchur Lake and along the edges of tanks, &c. Occasionally affects the sea coast and Kurrachee harbour, but by preference the inland waters. Breeds probably in Persia. In Upper India the Avocet is less common; in Kutch, Jodhpore and N. Guzerat rather rare.

### Gen. **Himantopus.**—*Briss.*

Bill long and straight; toes webbed only at the base; nostrils linear; hind toe wanting.

**186. Himantopus candidus** (*Linn.*), *Bonnat. Tabl. Encyl. et Meth. Orn.* 1, p. 24; *Jerd., B. Ind.* ii p. 704; *Hume, Ibis,* 1870, p. 146; *Dresser, B. Eur.* vii. p. 587, pl.; *Hume and Dav., Str. F.* vi. p. 464; viii. p. 113; *Legge, B. Ceylon* p. 919. Himantopus intermedius, *Hume, Nests and Eggs Ind. B.* p. 589; *Murray, Avif. Brit. Ind.* ii. p. 632, No. 1317. Charadrius himantopus, *Linn., Syst. Nat.* 1, p. 255.—The Stilt.

In winter plumage, the forehead, lores, chin, throat, entire lower parts, lower back and rump white; crown of the head dusky or dark ash; neck behind ashy grey, the feathers tipped with white; upper back and scapulars brown; the feathers with pale tippings; primaries dark brown, the inner ones tipped white; secondaries also with white tips; central tail feathers very pale grey, the rest white. In the breeding plumage the primaries, secondaries, scapulars, tertiaries and upper back are rich glossy black, with greenish reflections; the crown of the head dusky or dark brown, spreading over and below the eyes.

*Length.*—15 to 16 inches; wing 8·5 to 9; tail 3; bill black, reddish at the base, 2·75 inches in length; tarsi 4·5 to 5·5; irides blood red; legs and feet lake red.

*Hab.*—India generally, also Burmah and Ceylon, in large flocks during winter, frequenting margins of lakes and ponds, also banks of rivers. Breeds in Sind during June in the Narra Districts. Eggs 2—4 in number, of a pale blue colour, spotted and speckled with dark brown and olive green. Incubation 18 to 20 days. The young are said to leave the nest immediately they are hatched, and hide themselves among very scanty cover. Found also in Beloochistan, Afghanistan, Persia, and probably Mesopotamia.

## **Family,** PARRIDÆ.

Bill long, one and a half or twice the length of the head; nostrils lateral; wing spurred or with a tubercle; tarsi long; toes long with long claws.

### Gen. **Metopodius.**—*Wagl.*

Bill moderate, stout, compressed, thick at the base, the culmen curved at the tip; forehead with a carbuncle; tail short; nostrils small, ovate; 2nd and 3rd quills of wing longest; feet very large; toes slender and long; claws very long, especially of the hind toe.

**187. Metopodius Indicus** (*Lath.*), *Jerd.*, *B. Ind.* iii. p. 708; *Hume, Nests and Eggs Ind. B.* p. 591; *id.*, *Str. F.* iii. p. 183; *Blyth, B. Burm.* p. 157; *Butler, Str. F.* iv. p. 19; *Armstrong, t. c.* p. 348; *Oates, B. Br. Burm.* ii. p. 358; *Murray, Avif. Brit. Ind.* ii. p. 633, No. 1318. Parra indica, *Lath.*, *Ind. Orn.* ii. p. 765; *Salvad.*, *Ucc. Born.* p. 342; *Oates, Str. F.* vi. p. 165; *Hume and Dav.*, *t. c.* p. 464; *Hume, Str. F.* viii. p. 113; *Oates, Str. F.* x. p. 241.—The BRONZE-WINGED JACANA.

Whole head, neck all round, upper back, and whole lower plumage black glossed with green, the upper back glossed with purplish; lower back, scapulars, tertiaries and wing coverts glossy bronze; rump and upper tail coverts, also the flanks, tail and under tail coverts maroon; vent and thigh coverts brown, tinged with maroon and streaked with white; primaries and secondaries black, the later ones bronze on their outer webs; chin and throat whity brown; supercilium reaching to the nape white; bill with the basal half of upper mandible and frontal shield livid blue; rest of upper mandible and whole of the lower one green; irides brown; legs and feet slaty colour.

*Length.*—10·5 inches; tail 2; wing 6·2; tarsus 2·6; bill from gape 1·3. Females are slightly larger.

*Hab.*—India generally, also the Indo-Burmese Countries, but not in the drier northern parts as Sind, Punjab, and Rajpootana. Affects jheels marshes, large swamps and weedy tanks. Breeds during the monsoon, making a floating nest in some sequestered part of a jheel or marsh. Eggs 6—7 in number, moderately broad ovals, a good deal pointed towards one end; the ground colour varies from a pale stone colour to a reddish olive brown, highly polished, marked with fine lines of blackish brown.

## **Sub-Family,** PARRINÆ.

General characters of the Family; feet large; toes and claws very long and thin, to enable the species to walk on marshy or oozy ground and aquatic plants.

### Gen. **Hydrophasianus.**—*Wagl.*

1st and 2nd quill of wing equal and longest; primaries with lanceolate appendage to the tips; bill more slender than in *Metopodius*; forehead without a frontal shield; tail long; central feathers much elongated in the breeding season.

**188. Hydrophasianus chirurgus** (*Scop.*), *Jerd., B. Ind.* iii. p. 709; *Hume, Nests and Eggs Ind. B.* p. 592; *id., Str. F.* iii. p. 185; *Salvad., Ucc. Born.* p. 343; *David et Oust. Ois. Chine*, p. 483; *Legge, B. Ceylon*, p. 914; *Oates, B. Br. Burm.* ii. p. 360; *Murray, Vert. Zool., Sind*, p. 259; *Murray, Avif. Brit. Ind.* ii. p. 634, No. 1319. Tringa chirurgus, *Scop., Del. Flor. et. Faun. Insubr.* ii. p. 92. Parra sinensis (*Gm.*), *Syst. Nat.* I, p. 709. Hydrophasianus sinensis, *Blyth and Wald., B. Burm.* p. 157.—The Pheasant-tailed Jacana.

In winter plumage, the forehead, crown, a streak from the base of the bill through the eye, extending down each side of the neck on to the breast and forming a pectoral gorget; also the back of the neck dusky or pale hair brown, the feathers on the forehead and crown tipped with white; supercilium white, and a pale golden yellow line from behind the eye; back, scapulars, tertials and lesser wing coverts glossy olive, or pale hair brown; the lower back, rump, upper tail coverts and central tail feathers slightly darker, and the lesser wing coverts mottled and barred transversely with white. Shoulder of wing spurred. First primary with an appendage, the shaft of 2nd, 3rd and 4th in some specimens hair like at the tip, all dark brown, and, except the first and second, broadly white on their inner and outer webs; greater coverts and secondaries, chin, throat, neck in front, abdomen, vent and under tail coverts white; tail 3·5 to 4 inches. In breeding plumage the forehead, crown, entire face, chin, throat and neck in front white. There is a black patch on the nape; and the neck behind is shining golden yellow, edged on the sides with black; back, scapulars and tertiaries dark olive brown, with purplish reflections; rump and upper tail coverts bronzed dark brown; tail black; breast and entire lower parts dark or deep dusky brown; shoulder of wing spurred; wing coverts white; primaries as in the winter plumage.

*Length.*—18 to 20 inches; irides dark brown; bill plumbeous at the base and tipped greenish, 1·25 in length; tail 10 to 11 inches; wing 8 to 8·5; tarsus 2·12; middle toe and claw 3 inches; hind toe and claw 2 inches.

*Hab.*—Throughout India, Ceylon and British Burmah. Common in Sind on the Munchur and other Lakes, also in the Punjab and N.-W. Provinces. Breeds in the Province from May to September, making a large floating nest. Eggs, pear-shaped, of a beautiful bronze colour.

## Family, RALLIDÆ.

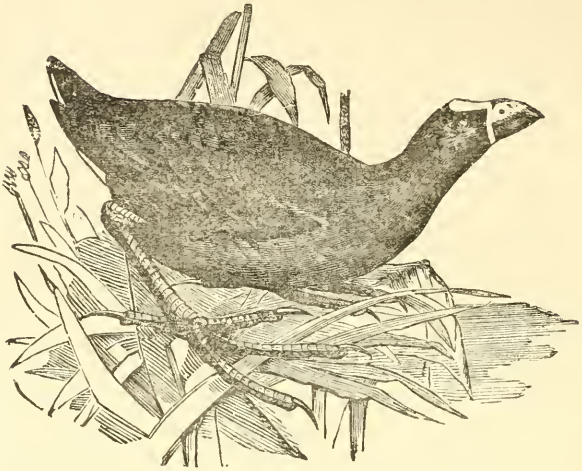
Bill compressed, short, pointed, thick, wedge-shaped; nostrils in a short groove; legs stout; toes long; tarsi moderate; tail short.

### Sub-Family, GALLINULINÆ.—Water-Hens.

Bill with the keel advancing on the forehead, where there is usually a casque; toes long and slender or bordered by a scolloped web; wings short and rounded; hind toe long.

Gen. **Porphyrio**.—*Briss.*

Bill very thick; casque large; mid-toe as long as tarsi, slender, not fringed with web.



Porphyrio poliocephalus. The Purple Coot.

**189. Porphyrio poliocephalus** (*Lath.*), *Jerd.*, *B. Ind.* iii. p. 713; *Blyth*, *B. Burm.* p. 161; *Butler*, *Str. F.* iv. p. 20; *Oates*, *Str. F.* vi. p. 165; *Elliot*, *Str. F.* vii. p. 22; *Legge*, *B. Ceylon* p. 795; *Murray*, *Vert. Zool.*, *Sind*, p. 260; *Oates*, *B. Br. Burm.* ii. p. 351; *Murray*, *Avif. Brit. Ind.* ii. p. 635, No. 1320. Gallinula poliocephala, *Lath.*, *Ind. Orn. Suppl.* p. lxviii. Porphyrio neglectus, *Scheg. Mus. P. B.*, *Ralli*, p. 53; *Hume*, *Str. F.* i. p. 249; *Hume*, *Nests and Eggs* p. 594; *id.*, *Str. F.* iii. p. 185.—The Purple Coot.

Occiput and nape, lores, and round the eyes greyish, clouded with purple; cheeks, chin and throat the same, but with more of a purple tinge; neck in front and breast pale bluish; lower breast, abdomen, flanks, vent and thigh coverts dark purplish blue; under tail coverts white; back of neck, back, rump, and upper tail coverts purplish blue; scapulars, wing coverts and outer webs of primaries pale greenish blue, the inner webs of primaries, secondaries and tertials dark brown or black; tail black, the feathers on the outer web edged with bluish.

*Length.*—18 inches; wing 10 to 10·2; tail 4·5; bill at gape 1·62; tarsi 3·62; mid-toe 3·62; casque and spot at base of bill cherry red; bill red; irides red; legs crimson.

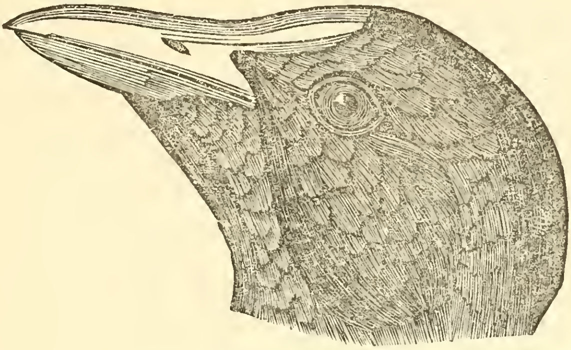
*Hab.*—Throughout India, Ceylon and British Burmah; also in Persia, Beloochistan and Afghanistan. Common in Sind in suitable localities, but I do

not believe they are anywhere as numerous as on the Munchur Lake, where among the rushes, they are with the Bald Coot simply innumerable.

Breeds in the Province from May to September, making a nest of rushes, &c., in the reedy grass. Eggs prettily marked on a greenish ground with spots, blotches and streaks of a reddish colour, lake red or rich red.

## Gen. **Fulica.**

Bill moderate; nostrils lateral; casque small; wing with a tubercle at the shoulder; tail short; toes with lobate membrane.



Fulica atra.

**190. Fulica atra**, *Linn., Syst. Nat.* i, p. 257; *Jerd., B. Ind.* iii. p. 715; *Hume, Str. F.* i. p. 249; *id., Nests and Eggs* p. 595; *Blyth, B. Burm.* p. 162; *Wardlaw-Ramsay, Ibis,* 1887, p. 472; *Dresser, B. Eur.* vii. p. 327; *Murray, Vert. Zool., Sind,* p. 261; *Oates, B. Br. Burm.* ii. p. 352; *Murray, Avif. Brit. Ind.* ii. p. 636, No. 1321.—The BALD COOT.

Upper plumage black; hoary, dark ash, lead colour or dusky brown below; a spot below the eye, and the outer edge of the wings white; frontal disc or casque white; also the bill, which in the breeding season is tinged pale red; irides blood red; legs dull green, with a yellow, green, and red garter in the breeding season.

*Length.*—15 to 16 inches; wing 7·5 to 7·75; tail 2; bill at gape 1·41.

*Hab.*—Throughout India, Ceylon and British Burmah; also Europe (central and south), Egypt, Assam, Nepaul, Persia, Beloochistan and Afghanistan. In Sind it is numerous in suitable localities, but on the Munchur Lake, as Mr. Hume says (*Str. F.* vol. i. 249) "they would have to be counted not by thousands, but by hundreds of thousands. * * * You can shoot nothing without knocking over some of these wretched coots." He also adds "that

in no part of the world has he even seen such incredible multitudes of coot as are met with in Sind; in the Munchur Lake *par excellence*."

### Gen. **Podica**.—*Less.*

General characters of *Fulica*; bill rail-like; neck more lengthened; toes lengthened and webbed.

**191. Podica personata**, *G. R. Gray, P. Z. S.* 1848, p. 90; *Aves*, pl. 4; *Hume, Str. F.* iii. p. 185; *Blyth, B. Burm.* p. 162; *Hume and Dav., Str. F.* vi. p. 465; *Hume, Str. F.* viii. p. 113; *Oates, Str. F.* x. p. 241; *id., B. Br. Burm.* ii. p. 353; *Murray, Avif. Brit. Ind.* ii. p. 637, No. 1322. —The Masked Finfoot.

Forehead, lores, a supercilium extending to the nape, cheeks, anterior part of ear coverts, chin, throat and front of the neck black; this black patch bordered by a white line, terminating on either side at the posterior corner of the eye; crown, nape and upper neck dark ashy; sides of neck olive brown; back, rump, scapulars, upper tail coverts and the whole of the wing brown, tinged with green; sides of the breast and of the body brown; breast and abdomen white, the latter barred with brown; vent and under tail coverts brown, closely barred with whitish, the longer feathers of the coverts almost wholly brown; wing coverts sooty brown; tail plain brown, tipped paler. (*Oates.*)

The female has the chin, throat, and front of the neck white, with a black margin all round, which extends a little over the lores, and has the same outer border and has the black mask of the males. (*Tickell* ex *Oates.*) Iris hazel brown; tarsus and toes light green; bill orange yellow, paler at the tips; edges of eyelids yellow.

*Length.*—22 inches; tail 5·8; wing 10; tarsus 2·1; bill from gape 2·3.

*Hab.*—Tenasserim. Oates says it is an excessively rare bird, of which very few specimens have been procured. Lieut. Lloyd shot a specimen in some part of Karenne. Col. Tickell observed it in Tenasserim, and Mr. Davison procured it at Amherst, Mergui and Bankasoon. It is said to be known to occur in Cachar and Assam.

### Gen. **Hypotænidia**.—*Reich.*

Bill moderately long, straight or slightly arched, compressed at the base, cylindrical at the tip; upper mandible grooved for two-thirds of its length; nostrils lateral, linear, and situated in the groove; lower part of tibia naked; tarsi long and robust; toes long and slender, three before and one behind; anterior toes entirely divided; wings short and rounded; 3rd and 4th quills longest.

**192. Hypotænidia striata** (*Linn.*), *Wald., Trans. Zool. Soc.* viii. p. 95; *Hume, Nests and Eggs Ind. B.* p. 605; *Blyth, B. Burm.* p. 161;

*Hume, Str. F* iii. p. 189; *Hume and Dav., Str. F.* vi. p. 468; *Legge, B. Ceylon*, p. 775; *Hume and Marsh., Game Birds* ii. p. 245, pl.; *Oates, Br. Burm.* ii. p. 339; *Murray, Avif. Brit. Ind.* ii. p. 638, No. 1326. Rallus striatus, *Linn., Syst. Nat.* i. p. 262.—The Blue-breasted Banded Rail.

Top of head, nape and hind neck chestnut; upper plumage, including the wing coverts and tertiaries, blackish brown, each feather broadly edged with olive brown and barred with white; primaries, secondaries and tail dark brown, barred with white; lores, cheeks, ear coverts, sides of the neck, foreneck and breast bluish grey, tinged somewhat with rufescent; sides of the body, lower abdomen, vent, under tail and thigh coverts, also the under wing coverts, dark brown, barred with white; centre of abdomen dull white; bill rosy pink on the basal half; remainder horn colour or yellowish green; irides red; legs and feet dull greenish or olive brown. The young has not the chestnut head and bluish breast.

*Length.*—9·8 to 11·5 inches; wing 4·5 to 5; tail 1·5 to 2·25; tarsus 1·35 to 1·62; bill from gape 1·32 to 1·82.

*Hab.*—Southern India, along the bases of the Neilgherries, the Wynaad, Malabar Coast, Southern Konkan, in the Rutnagherry districts and Southern Ceylon. It also occurs in Lower Bengal in the deltaic districts, in the neighbourhood of Calcutta too, as well as in Sylhet, Cachar, Khasia Hills, and the Assam Valley to Sadiya. In Arracan it is said to be fairly common, while in Burmah, Oates says, it is found throughout the whole province, Tenasserim included. It breeds in all localities where they occur, from May to October, making a small nest of grass on the ground near water, surrounded by thick vegetation. Eggs, seven in number, of a pinkish stone colour blotched with pale purple. In length they vary from 1·28 to 1·41 inches, and from 0·98 to 1·13 in width.

*Hypotænidia obscuriora, Hume, Str. F.* ii. p. 302; iv. p. 294; *id. and Marsh., Game Birds* 253, pl., is recorded from the Andamans as a separate race, but to my mind it can scarcely stand as a species, and hence it is suppressed.

## Gen. **Rallus**.—*Linn.*

Bill moderately long, straight or slightly curved at tip; shoulder with a small spur; other characters as in *Hypotænidia*.

**193. Rallus indicus**, *Blyth, J. A. S. B.* xviii. p. 820; *Jerd., B. Ind.* iii. p. 726; *Hume, Str. F.* iii. p. 416; *Blyth, B. Burm.* p. 162; *David et Oust. Ois. Chine* p. 489; *Legge, B. Ceylon* p. 778; *Hume, Str. F.* viii. p. 113; *Hume and Marsh., Game Birds* ii. p. 257, pl.; *Oates, B. Br. Burm.* ii. p. 342; *Murray, Avif. Brit. Ind.* ii. p. 638, No. 1327.—The Indian Water Rail.

Above, including the sides of the neck, scapulars and tertiaries olive brown, sometimes with a ruddy tinge, each feather with a broad black mesial streak;

a dark streak from the lores continued under the eye to the ear coverts; a broad white supercilium from above this to the nape; wing coverts dark olive brown, some of them tipped with whitish, and all broadly edged with ruddy; primaries and secondaries brown, some of the inner ones margined with ruddy; chin and throat plumbeous; cheeks, foreneck, breast and centre of abdomen plumbeous ashy, the feathers more or less fringed with ruddy; sides of the abdomen and of the body, axillaries and vent blackish, barred with white; under tail coverts white, each feather with a large black central patch; under wing coverts black, with white margins. Bill dull red, dusky on the culmen and tip; irides red brown; legs and feet dirty pale green.

*Length.*—10 to 10·5 inches; tail 2·2; wing 5·2; tarsus 1·6; bill from gape 1·6.

*Hab.*—From Bengal to Nepaul. Recorded from Arracan by Blyth. Frequents patches of rush and grass at the edges of swamps and ditches. A migrant to India. According to Jerdon it is a rare bird in Central and Southern India, and has chiefly been found in the cold season.

## Gen. **Rallina**.—*Reich.*

Base of bill not prolonged over the forehead, feet shorter than in the Rails.

**194. Rallina euryzonoides** (*Lafresn.*), *Tweedd.*, *P. Z. S.* 1877, p. 767; *Legge*, *B. Ceylon*, p. 772; *Hume*, *Str. F.* viii. p. 113; *Hume and Marsh.*, *Game Birds* ii. p. 237, pl.; *Oates*, *Str. F.* x. p. 242; *Oates*, *B. Br. Burm.* ii. p. 340; *Murray*, *Avif. Brit. Ind.* ii. p. 639, No. 1328. Gallinula euryzonoides, *Lafresn.*, *Rev. Zool.* 1845, p. 368. Rallus zeylanicus, *Gm.*, *Syst. Nat.* 1, p. 716. Porzana ceylonica, *Blyth*, *Cat. B. Mus. As. Soc. Beng.* p. 285; *Jerd.*, *B. Ind.* ii. p. 725; *Hume*, *Str. F.* i. p. 440; iii. p. 188; *Bourdillon in Blyth's B. Burm.* p. 162. Rallina ceylonica, *Wald. in Blyth's B. Burm.*, p. 162.—The Banded Crake.

Whole head, neck all round and breast chestnut; upper plumage, wings and tail rich olive brown with a ruddy tinge on the back, rump, scapulars and tertiaries; quills with white bars on the inner webs; chin and throat whitish; abdomen, vent, under tail coverts, sides of the body and under wing coverts broadly barred with dark brown and white. Bill with the base of the upper mandible and the greater portion of the lower green; remainder of bill dark brown; irides blood red; eyelids grey; legs black. (*Oates.*)

*Length.*—10 inches; tail 2·2; wing 5·5; tarsus 1·75; bill from gape 1·3.

*Hab.*—Thayetmyo in British Burmah, where Oates had a live specimen sent to him by Colonel Horace Browne. In Ceylon it arrives in October in considerable numbers, coming to that island in an exhausted condition. It remains there till February.

It has been found in Sikkim, Bhootan, Nepaul and in Goomsoor in the Ganjam Districts. Mr. Hume got a specimen from the Assamboo Hills, and

Mr. Brooks in Cawnpore. It has also been got near Cuttack and in Mainpuri near Lucknow. About Calcutta, and also near Madras, it has also been obtained, but all these were apparently stragglers during severe winter.

**195. Rallina fasciata**, *Raffl.*, *Trans. Linn. Soc.* xiii. p. 328; *Salvad.*, *Ucc. Born.* p. 337; *Wald. in Blyth's B. Burm.* p. 162; *id.*, *Trans. Zool. Soc.* ix. p. 231; *Hume*, *Str. F.* iii. p. 188; *Hume and Dav.*, *Str. F.* vi. p. 467; *Hume*, *Str. F.* viii. p. 113; *Hume and Marsh.*, *Game Birds* ii. p. 235, pl.; *Oates*, *B. Br. Burm.* ii. p. 341; *Murray*, *Avif. Brit. Ind.* ii. p. 640, No. 1329.—The Malay Banded Rail.

Whole head, neck all round and breast deep chestnut, rather paler on the chin and throat; back, rump, upper tail coverts and tail ruddy brown; scapulars and tertiaries ruddy brown, with a few obsolete ferruginous bars near the tips of some of the feathers; lesser wing coverts ruddy brown, with a ferruginous spot in the centre of each feather, the remaining coverts and all the quills brown, with rufous white bars on both webs; abdomen, vent, sides of the body, under wing coverts, axillaries, and under wing coverts broadly barred, with black and white, the latter part tinged with ferruginous; legs, feet and bare portion of tibia coral red; bill black, dark horny blue or plumbeous blue; irides dull red, cinnabar red or red brown; orbital skin and gape bright vermilion. (*Davison.*)

*Length.*—10 inches; tail 2·3; wing 5·1; tarsus 1·7; bill from gape 1.

*Hab.*—Tenasserim, about Amherst and Tavoy. Extends down the Malay Peninsula, and in the Islands of Sumatra, Java and Borneo. Mr. Davison found it frequenting rice fields surrounded by low brushwood.

**196. Rallina Canningi** (*Tytler*), *Hume*, *Str. F.* i. p. 86; ii. p. 500; *Hume and Marsh.*, *Game Birds* ii. p. 241, pl.; *Murray*, *Avif. Brit. Ind.* ii. p. 615, No. 1330.—The Andamanese Banded Crake.

Head, neck, breast, wings and tail dark maroon; primaries and secondaries olivaceous brown on the outer webs, but strongly tinged with rufous; inner webs black or blackish brown, with numerous moderately narrow, oblique, transverse rufous white bars, 3 on the 1st primary, 4 on the next, and 5 or 6 on the others; abdomen and flanks, also the sides of the body, black, transversely banded with white; edges of the wing coverts and quills dusky; under tail coverts maroon. Legs and feet olive green; bill delicate pale chrysoprase green; irides red.

*Length.*—13 to 14·5 inches; wing 5·95 to 6·4; tail 3·25 to 3·6; tarsus 2·05 to 2·3; bill at front 1·1 to 1·22.

*Hab.*—The Andamans, to which Island it is confined, as far as present knowledge extends. Hume says it is chiefly a woodland Rail, haunting the neighborhood of streams and pools, bordered by dense forests. According to Capt. Wimberley (*Hume*), it is extremely shy, does not take wing unless

hard pressed, and feeds on insects and fresh-water fish. Breeds in the island during July. Eggs, 6 in number, broad, very regular ovals; in colour varying from pinky white to a rich pinky stone colour, or even warm *café au lait* boldly streaked with maroon red and purple.

### **Sub-Family,** RALLINÆ.—RAILS.

Forehead with a nude shield; bill compressed, slender; toes shorter than in the *Gallinules;* shoulder of wing with a tubercle or short spur.

### Gen. **Porzana**.—*Vieill.*

Wings moderate, rounded; tail short; toes long, about the length of the tarsus.

**197. Porzana Bailloni** (*Vieill.*), *Dresser, B. Eur.* vii. p. 275, pl.; *Legge, B. Ceylon*, p. 766; *Hume and Dav., Str. F.* vi. p. 467; *Scully, Str. F.* viii. p. 358; *Hume and Marsh., Game Birds* ii. p. 203, pl.; *Oates, B. Br. Burm.* ii. p. 344; *Murray, Avif. Brit. Ind.* ii. p. 641, No. 1328. Rallus Bailloni, *Nouv. Dict. d'Hist. Nat.* xxviii. p. 548. Crex pygmæa, *Naum. Naturg. Vog. Deutschl.* ix. p. 567. Porzana pygmæa, *Jerd., B. Ind.* iii. p. 723, No. 910; *Murray, Vert. Zool., Sind*, p. 264. Zaporna pygmæa, *Hume, Nests and Eggs Ind. B.* p. 603.—The PIGMY RAIL or BAILLON'S CRAKE.

Head and hind neck wood brown; back, scapulars and wing coverts yellowish brown with an olive tinge, the feathers with numerous irregular, white, black-edged spots; supercilium, cheeks, chin and throat grey; breast and upper abdomen bluish grey; the sides, vent and under tail coverts black, with transverse white bars; primaries dusky brown; outer web of 1st quill yellowish white; secondaries with zigzag white lines bordered with black; tertiaries yellowish brown, with a tinge of olive, spotted or streaked irregularly with white, which have edgings of black; tail dusky brown; bill dark green; irides reddish; legs fleshy brown.

*Length.*—7 to 7·75 inches; wing 3·67; tail 1·75 to 2; bill at front 0·62; tarsus 1·0; mid-toe and claw 1·5.

*Hab.*—Sind, Punjab, N.-W. Provinces and Oudh, also Bengal, Nepaul, Rajputana, Kutch, Guzerat, Concan and Deccan, and generally throughout India and Burmah, also Ceylon. It is also an inhabitant of Beloochistan and Afghanistan, and probably Persia also. In Central and Southern India it is said to be not uncommon.

Breeds during July and August in the plains of Upper India and in the lower ranges of the Himalayas about rice swamps and marshy pools. Eggs, six in number, oval, slightly pointed towards one end; a pale olive stone colour or greenish drab, thickly freckled and mottled with faint dusky clouds and streaks. In length they vary from 1·1 to 1·22 and in width from 0·83 to 0·91 inch.

The habits of this species is not unlike the other Rails, but as a rule it is more shy and retiring, and when disturbed, runs with great speed on the lotus leaves or other aquatic herbage, and conceals itself among the thickest of the coverts it frequents.

**198. Porzana maruetta** (*Linn.*), *Jerd.*, *B. Ind.* iii. p. 722, No. 906; *Blyth*, *B. Burm.* p 161; *Dresser*, *B. Eur.* vii. p. 267, pl.; *Hume*, *Str. F.* viii. p. 113; *Hume and Marsh.*, *Game Birds* ii. p. 213, pl.; *Murray*, *Vert. Zool.*, *Sind*, p. 264; *id.*, *Avif. Brit. Ind.* ii. p. 642, No. 1329. Rallus porzana, *Linn.*, *Syst. Nat.* i. p. 262. Ortygometra maruetta, *Leach*, *Syst. Cat. Mamm. H. B. Brit Mus.* p. 34.—The Spotted Crake.

Forehead ashy brown; crown and nape dusky, streaked with ferruginous; superciliary streak extending behind the eye ashy grey, spotted with white; hind neck dusky, minutely freckled with black and white. Upper back and scapulars dark brown, almost black, the feathers broadly margined and tipped with ochreous olive, and usually the margins of one or both webs with linear spots and streaks of white; lower back and rump dusky brown, the feathers narrowly barred with white; wing coverts like the back, the outer margin of both webs with two pairs of white black-edged spots; tertiaries dark brown on their outer webs, and with 6—7 narrow, oblique white bars; their inner webs rufescent brown; primaries and secondaries pale hair brown, the outer web of the first quill and bastard primary, also the edge of the wing, white; the margins of the outer webs of the other primaries tinged with pale rufescent; axillaries dark brown with transverse white bars; chin and throat greyish white; breast olive brown, the feathers barred with white; abdomen ashy white; flanks olive brown, barred transversely with black and white; tail rufescent brown, mesially dark brown; vent and under tail coverts rufescent white; bill greenish yellow, orange at the base; irides reddish brown; legs bright yellowish green.

*Length.*—8·8 to 9 inches; wing 4·5 to 4·8; tail 1·82 to 2; bill at front 0·75 to 0·9; tarsus 1·4; mid-toe and claw 1·6.

*Hab.*—Sind, Punjab, N.-W. Provinces and Oudh, the Himalayas, Bengal, Rajputana, Guzerat, Kutch, Concan, Deccan and Mysore; also Arabia, Beloochistan, Persia, Afghanistan, and Eastern Turkestan. Occurs all over Europe and North Africa. Affects the reedy swamps and feeds on aquatic insects, larvæ, snails and grass seeds.

**199. Porzana fusca** (*Linn.*), *Jerd.*, *B. Ind.* iii. p. 724, No. 911; *Blyth*, *B. Burm.* p. 161; *Legge*, *B. Ceylon* p. 769; *Hume and Marsh.*, *Game Birds*, ii. p. 217; *Oates*, *B. Br. Burm.* ii. p. 346; *Murray*, *Avif. Brit. Ind.* ii. p. 642, No. 1330. Rallus fuscus, *Linn.*, *Syst. Nat.* i. p. 262. Rallina fusca, *Hume*, *Nests and Eggs Ind. B.* p. 604; *Hume*, *Str. F.* viii. p. 113.—The Ruddy Crake.

Forehead as far back as the eyes, the sides of the head and neck, the fore-neck, breast and upper abdomen rich ferruginous; chin and throat whitish;

sides of the body and lower abdomen olivaceous; flanks, vent and under tail coverts dark brown, irregularly and indistinctly barred with white; the whole upper plumage, wings and tail olive brown; under wing coverts brown edged with white. The female has the ferruginous of the lower parts paler and the white of the throat extends lower down; irides crimson; eyelids plumbeous, the edges red; bill greenish brown; legs and toes red; hinder parts of leg fuscous. (*Oates.*)

*Length.*—8·5 inches; tail 1·75; wing 3·8; tarsus 1·4; bill from gape 1·0.

*Hab.*—Southern and Central India, Punjab, N.-W. Provinces, and Rajpootana (rare). Common in Lower and Eastern Bengal, also in British Burmah. Breeds during July and August on the Woolar Lake in Cashmere, also in Burmah, where, according to Oates, it is a permanent resident. It is also recorded from Arracan, Ceylon and the Malay Peninsula.

**200. Porzana minuta** (*Pall.*), *Naum. Vog. t.* 239; *Gould, B. Eur.* pl. 345; *Hume, Str. F.* i. p. 251; *Murray, Hdbk., Zool., &c., Sind*, p. 224; *id., Avif. Brit. Ind.* ii. p. 647, No. 1331. Porzana parvus, *Scop.*—The Little Crake.

Crown of the head deep brown; sides of the head, both above and below the eye, ash or slate colour; chin and throat dull or greyish white, the forepart of the neck pale ash; under parts ashy or grey blue in the males, light rufous buff in females; lower abdomen and vent deep or olive brown, spotted with white; neck behind and shoulder of the wing olive brown; back deep olive brown, the feathers with broad mesial dark stripes, their inner margins pale, with some white linear spots and streaks; primaries and secondaries deep brown with pale edges; lesser wing coverts plain dull olive brown; tail dusky olive brown; under tail coverts slaty grey with spots and bars of white.

*Length.*—7 to 8 inches; bill 0·7; wing 3·8; tail 1·5 to 1·75; irides red; bill and legs yellowish green.

Mr. Hume in *Str. F.* i. p. 251, says:—"*Bailloni* (pygmæa) may always be distinguished at a glance from *minuta* by its smaller size, shorter, and in proportion deeper bill, and by having the back, scapulars and greater wing coverts all more or less profusely variegated with bluish white, whereas in *minuta* the white markings, which are somewhat broader and purer white, are confined as a rule to the centre of the back, though occasionally some of the longer scapulars are also faintly edged with bluish white. In *minuta* the wing varies from 3·75 to 4·1; the bill at front 0·7 to 0·76; in *Bailloni* (pygmæa) the wing varies from about 3·45; to 3·62, and the bill 0·6 to 0·62.

*Hab.*—Sind, Eastern Turkistan and Cashmere. Not known to occur anywhere else in India. It is abundant in all the large inland pieces of water or dhunds.

**201. Porzana akool** (*Sykes*), *Jerd., B. Ind.* iii. p. 722, No. 908; *Hume, Str. F.* iv. p. 21; *id. and Marsh., Game Birds Ind.* ii. p. 226;

*Murray, Avif. Brit. Ind.* ii. p. 643, No. 1332.—The Brown and Ashy Crake.

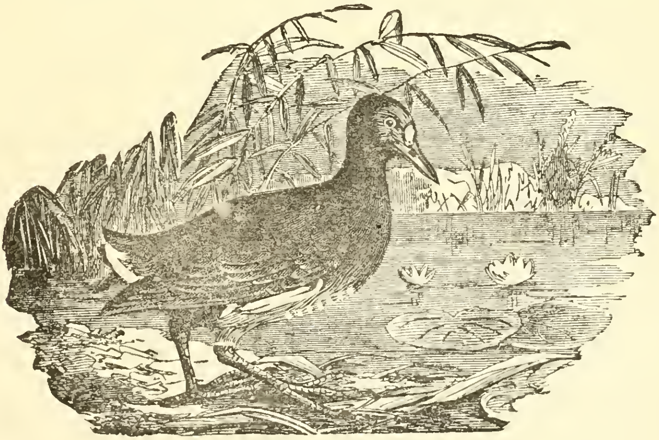
Above olive brown ; the rump ashy brown ; wings and tail dusky ; wing and lower tail coverts deep brown ; chin white ; throat, breast, and belly ashy brown ; flanks olive brown. Bill greenish ; irides red brown ; legs and feet livid purple.

*Length.*—11 inches ; wing 7 ; tail 3·5 ; bill at front 1·75 ; tarsus 2.

*Hab.*—Central Provinces, in Sumbalpoor and Raipoor ; also Guzerat, Chota Nagpoor, Bengal, N.-W. Provinces, Oudh and the Punjab Cis-Sutlej. It also occurs in the south-eastern portions of Rajputana (Bhurtpore), the Sambhar Lake, Ajmere, and Mount Abu. In Upper India, Hume says, it is common in the Duns, Terais and Bhabars that skirt the mountain bases of the Himalayas. It is less aquatic in its habits than any of the other Crakes, being often seen on stony ground in the open, though not very far from water ; does not affect swamps so much as it does thin grass along the margins of clear water streams. Breeds from May to August, nesting in bushes, grass, or bulrushes, along the margins of small streams or ditches. Eggs, 6—8 in number, a pale salmon white ground covered with blotches, spots and specks of reddish brown. They average from 1·4 to 1·6 inches in length and 0·99 to 1·15 in width.

## Gen. **Gallinula**.—*Briss.*

Bill moderate, curved slightly at the tip ; nostrils in a groove, placed about the middle of the upper mandible ; bill extending on to the forehead and forming a small shield ; shoulder of wing with a tubercle or spur ; toes very narrowly edged by membrane.



Gallinula chloropus. The Water or Moor Hen

**202. Gallinula chloropus** (*Linn.*), *Jerd., B. Ind.* iii. p. 716, No. 905 ; *Hume, Nests and Eggs Ind. B.* p. 397 ; *id., Str. F.* i. p. 250 ; iii.

p. 187; *Blyth, B. Burm.* p. 162; *Dresser, B. Eur.* vii. p. 313, pl.; *Hume and Dav., Str. F.* vi. p. 466; *Legge, B. Ceylon* p. 781; *Murray, Vert. Zool., Sind,* p. 262; *Oates, B. Br. Burm.* ii. p. 347; *Murray, Avif. Brit. Ind.* ii. p. 645, No. 1333. Gallinula Burnesi, *Blyth, J. A. S. B.* xiii. p. 736. —The Moor Hen.

Top of head, nape and back of neck dusky olive brown; back, scapulars, tertiaries, wing coverts and upper tail coverts shining olive brown; primaries, secondaries and tail dusky brown, the outer web of the 1st quill white; a pale fulvous brown streak from behind the nostril on each side to the eye, and a patch of the same colour on the side of the head including the ear coverts; under each eye a white spot; chin and throat white; breast dark bluish ashy, the feathers tipped with pale or dirty fulvous; lower abdomen white; vent feathers black; under tail coverts white; feathers on the flanks long and lax, those falling on the thighs pale brown with a mesial white streak; bill reddish at base, greenish yellow at tip; irides red; an orange garter above the knee.

*Length.*—12 to 13 inches; wing 6·75; tail 3; bill at gape 1·1. In mature plumage the entire head and neck are dark brown, almost black, and the upper plumage darker olive brown.

*Hab.*—Diffused throughout India and parts of Burmah, Central and South Europe, Africa and Java. Occurs also in Beloochistan, Persia, Afghanistan, Eastern Turkistan, Nepaul and Cashmere, affecting small rivers and marshes. In the dhunds and jheels in Sind, also in the Deccan, Guzerat and Rajputana, it is extremely common, swimming about freely. During the day, on retreating to the edges of the tanks or dhunds, it lives concealed among the reeds and rushes. It is less shy towards evening when it creeps along the margins of the waters among the long reeds in quest of aquatic insects, worms and seeds; breeds from June to August. The nest is a large structure of withered reeds and rushes, placed near the brink of the water; the female lays from 4 to 6 eggs; in shape they are long, oval or ovate pyriform, of a stone colour, with a pinkish tinge, speckled, spotted and blotched with reddish brown or red. It is said that the female never quits its nest without covering her eggs with the leaves of the surrounding herbage. The young are able to swim immediately they are hatched.

**203. Gallinula phœnicura** (*Penn*)., *Jerd., B. Ind.* ii. p. 720, No. 907; *Hume, Nests and Eggs Ind. B.* p. 599; *Murray, Vert. Zool. Sind,* p. 263; *id., Avif. Brit. Ind.* ii. p. 645, No. 1334. Rallus phœnicurus, *Pennant in Forst. Zool. Ind.* p. 19, pl. ix. Erythra phœnicura, *Wald., Trans. Zool. Soc.* viii. p. 94; *Salvad., Ucc. Born.* p. 340; *Legge, B. Ceylon,* p. 786; *Oates, B. Br. Burm.* ii. p. 348.—The White-breasted Water Hen.

Forehead, lores, entire face, chin, cheeks, throat, neck, breast and abdomen white; crown of the head, nape, neck behind, back, scapulars, wings, flanks and tail black, with greenish reflections; outer web of first quill white; lower

abdomen, vent and under tail coverts deep chestnut; bill yellow with a tinge of green; irides blood red.

*Length.*—12 to 13 inches; wing 6·5; tail 2·5; bill at front 1·5.

*Hab.*—Sind and throughout the Indian Peninsula, Ceylon and Burmah. In Sind not uncommon along the canals and the Indus. Breeds from May to August. Eggs greyish, with a light reddish tinge, spotted and blotched with various shades of red and bluish grey; affects generally the heavy undergrowth along the edges of canals.

### Gen. **Gallicrex.**—*Blyth.*

Bill as in *Gallinula*, with the base of the bill extending on to the forehead and forming a fleshy protuberance; toes long; hind toe and claws about half the length of the mid-toe; claws curved.

**204. Gallicrex cinereus** (*Gm.*), *Hume, Nests and Eggs Ind. B.* p. 596; *Wald., Trans. Zool. Soc.* ix. p. 229; *Oates, Str. F.* v. p. 165; *Wardlaw-Ramsay, Ibis*, 1877, p. 477; *Legge, B. Ceylon*, p. 791; *Murray, Vert. Zool. Sind*, p. 261; *Oates, B. Br. Burm.* ii. p. 349; *Murray, Avif. Brit. Ind.* ii. p. 646, No. 1335. Fulica cinerea, *Gmel., Syst. Nat.* i. p. 702. Gallinula cristata, *Lath., Ind. Orn.* ii. p. 779. Gallicrex cristatus, *Jerd., B. Ind.* iii. p. 716; *Blyth and Wald., B. Burm.* p. 161.—The Water Cock.

*Male in Breeding Plumage.*—Dull black, the feathers of the back, wing coverts, rump and upper tail coverts more or less edged with light brown; tertials dark brown, edged with pale whitey brown; edge of the wing white; quills dusky, the shaft of the 1st quill white; tail blackish brown, the outer feathers edged with pale brown; lower wing coverts dusky with whitish edges; bill greenish yellow, fine red at the base; the crest about one inch long, fleshy red; irides red; legs dull red.

*Length.*—16 to 17 inches; extent 23; wing 8·5; tail 3·5; tarsus 3. (*Jerd.*)

*Female.*—Top of head dull black or dusky brown; back of neck, back, scapulars, wing coverts and tertiaries the same, the feathers edged with fulvous, more broadly on the back and wings; tail the same; sides of the face including a broad supercilium fulvous, in some with a rufescent tinge; chin and throat fulvous white; neck in front, breast and entire under parts brownish fulvous, the feathers with narrow transverse bars; thigh-coverts the same; primaries and secondaries dusky brown; outer web of first quill fulvous.

*Length.*—13 to 14 inches; wing 7; tail 2·5; bill at gape 1·25; tarsus 2·5.

*Hab.*—Sind, Lower Bengal, Tennaserim, South and Central India, Burmah and Malayana. Affects large swamps and marshes, also the vicinity of rivers. On the Aaral, at Sehwan, several may be seen in the early morning, issuing from the thick cover of tamarisk, fringing the banks, and running along the edge of the water.

## Family, ARDEIDÆ.—Herons.

All the members of the *Ardeidæ* family swarm throughout India in suitable localities. All are permanent residents and breed from May to September. Their nests are generally loose structures, some more or less compact, and built of twigs, &c., on trees, standing in the vicinity of water, and particularly on those in the middle of large sheets of water. Eggs, 3 to 4, glossless, and in colour from pale sea green to bluish green, but it is not uncommon to find single nests containing from 8 to 10 eggs, differing in shape, size and colour.

The following, from Hume's *Nests and Eggs*, gives the average size of the eggs of the different species:—

| | |
|---|---|
| *Ardea cinerea*.................. .. | 2·27 × 1·66 |
| *Ardea purpurea*.................. | 2·17 × 1·56 |
| *Herodias alba*.................... | 2·11 × 1·55 |
| *Herodias garzetta* .............. | 1·73 × 1·22 |
| *Demiegretta gularis* ........... | 1· 7 × 1· 3 |
| *Bubulcus coromanda*........... | 1·71 × 1·32 |
| *Ardeola grayi* . ................. | 1·48 × 1·17 |
| *Butorides javanica* ........... | 1·64 × 1·23 |

An account by Layard of the breeding of *Herodias garzetta* and kindred species in Ceylon, conveys exactly what is observable in the breeding season of the *Ardeidæ* in India generally, and along the canals, &c., in the Narra Districts, and other large sheets of water in Sind.

During this season almost all the large pieces of water in India, unfrequented and distant from human habitation, in which trees are standing out of reach, except by boats, large colonies of ibises, spoonbills, cormorants, snake-birds, night-herons, &c., may be seen. During the day, except by the droppings of the birds, which coat the branches so thickly with lime, little suspicion would be excited of the spot being a heronry, as most of the birds, except a few sitting close, are away feeding, but towards eve, hundreds would be seen coming to roost, amid a continuous cackling. The report of a gun amongst them would present a scene scarcely describable. If disturbed before they have begun to lay, they are said to entirely desert the spot, and carry away almost every stick they had used in building and to begin operations afresh in a distant locality.

### Gen. Ardea—*Linn.*

Bill slender, the tip scooped; upper mandible with a groove from the nostril, but not extending to the tip; nostril covered partially by membrane; 2nd and 3rd quills longest; tarsi long and scutellate in front.

**205. Ardea goliath,** *Temm., Pl. Col.* 474; *Rupp., Faun. Abyss.* pl. 26; *Jerd., B. Ind.* iii. p. 739; *Hume, Nests and Eggs Ind. B.* p. 610, No.

621; *id.*, *Str. F.* i. p. 105; vii. p. 490; *Murray*, *Avif. Br. Ind.* ii. p. 651, No. 1342.—The GIANT HERON.

Upper plumage dark blue grey; short occipital crest and rest of head dark brown; sides of the head and entire neck chestnut brown; chin and throat white; neck in front white with black streaks; breast and abdomen dark chestnut brown. The young bird is dull grey above, the head, ear coverts and back of neck are pale rufous cinnamon. Bill dusky above, beneath and tip greenish; irides pale yellow; legs blackish (*Jerd.*)

*Length.*—55 to 65 inches; wing 24; tail 10; bill at front 8; tarsus 9; standing height nearly 4 feet.

*Hab.*—Bengal, near Calcutta and the Khasia hills. Nothing certain appears to be known of its nidification. All the species of the genus Ardea are said to be good for food, and the flesh is equal in flavour to that of *Grus cinerea.* They feed very variously on lizards, fish, frogs, &c., and often on fetid mice, &c. They are very patient, and often stand motionless in the water for hours together waiting for prey. They were formerly ranked as Royal Game and protected by Game laws. The flesh, it is said, was, and is to this day, esteemed as much as that of a pheasant.

**206. Ardea sumatrana,** *Raffles, Trans. Linn. Soc.* xiii. p. 325; *Jerd., B. Ind.* ii. p. 740 (part); *Hume, Nests and Eggs*, p. 610 (part); *Salvad., Ucc. Born.* p. 344; *Blyth, B. Burm.* p. 159; *Hume and Dav., Str. F.* vi. p. 469; *id., Str. F.* viii. p. 114; *Murray, Avif. Br. Ind.* ii. p. 651, No. 1343. Ardea typhon, *Temm., Pl. Col.* 745. Ardea tectirostris, *Gould P. Z. S.* 1843, p. 22; *id,. B. Austr.* vi. pl. 54.—The GREAT SLATY HERON.

Entire upper surface deep slaty; scapulars and feathers of the interscapulary region linear, lanceolate, and elongated, with the terminal portions greyish white; those of the base of the neck similar but less elongated; crown with a dull purplish shade, also on the occiput, crown, back and sides of the neck; occipital crest long, linear and greyish white, about 9 inches long; orbital region, a band above and below the eye to the commissure bare; ear coverts and sides of the occiput light ashy brown, sometimes faintly rufescent; chin, upper part of throat, and feathers on either side of the base of the lower mandible white; rest of the throat and foreneck mingled ashy brown and slaty, with here and there a slightly ruddy tinge; feathers of the base and sides and front of the neck elongated, some of them fully seven inches in length, linear lanceolate, and the terminal portions pearl grey; rest of entire lower surface ash grey; wing lining, axillaries and under surface of the wing pure blue slate colour. (*Hume.*)

*Length.*—50 inches; tail 6; wing 18·5; tarsus 7; bill at front 6·5 (*Hume*); irides bright yellow; facial skin dirty green; upper mandible horny black; lower one whitish horny, yellowish towards the tip.

*Hab.*—Southern Tenasserim from Mergui to Bankasoon, Recorded also from Arracan.

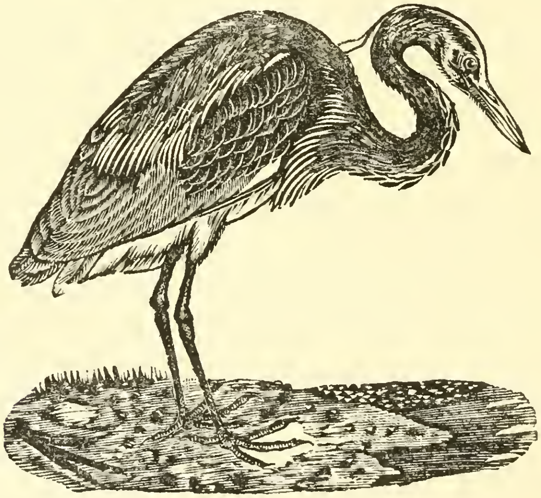
**207. Ardea insignis** (*Hodgson*), *Jerd.*, *B. Ind.* iii. p. 740; *Hume*, *Nests and Eggs Ind. B.* p. 160; *id.*, *Str. F.* vi. p. 471; *Murray*, *Avif. Br. Ind.* ii. p. 652, No. 1344. Ardea fusca, *Blyth*, *J. A. S. B.* xviii. p. 73.—The Dusky Grey Heron.

General plumage dusky cinereous, with a crest of a few narrow ashy feathers, the longest about 7·8 inches; quills and tail dark slaty; sides of the head and neck slightly tinged with rufous; elongated breast plumes fine silvery grey, edged with dusky at the base; rest of lower parts mingled ashy and rufous; scapulars elongated, lanceolate and tipped with silvery grey. Bill dusky above, yellow at the gape and bottom of lower mandible; feet dark greenish grey.

*Length.*—46 inches; wing 19; tail 6·5; bill at front 7; tarsus 7; standing height about 42 inches; hind toe and claw 4·5 inches.

*Hab.*—N.-E. Bengal, the Sikkim Terai, Assam, and Arracan, extending to Malayana.

**208. Ardea cinerea**, *Linn.*, *Syst. Nat.* i. p. 235; *Naum*, *Vogt.* t. 220; *Gould*, *B. Eur.* pl. 274; *Jerd.*, *B. Ind.* iii. p. 741; *Hume*, *Str. F.* i. p. 253; *Murray*, *Hdbk.*, *Zool.*, *&c.*, *Sind*, p. 226; *id.*, *Avif. Br. Ind.* ii. p. 652, No. 1345; *Hume*, *Nests and Eggs Ind. B.* p. 610; *Dresser*, *B. Eur.* vi. p. 217, pl.; *Oates*, *B. Br. Burm.* ii. p. 245.—The Common Heron.



Ardea cinerea.

Forehead, sides of the head and crown white ; a narrow streak from the base of the upper mandible over each eye, and another above it merging into the long occipital feathers, black ; neck behind bluish ashy ; in front white, with two rows of black elongate spots ; breast and under surface white ; back and wing coverts bluish ashy grey ; primaries black ; scapulars silvery grey ; tail bluish ashy ; bill dark yellow, brown on the upper mandible ; irides yellow ; nude oribitar area greenish.

*Length.*—39 inches ; wing 18 ; tail 8 ; bill at front 5.

*Hab.*—Throughout India and Europe. In Sind the Mohannas or fishermen use this species as a decoy in the capture of wild fowl. Each boat has usually from 5 to 10 birds, Their eyelids are sewn up, and they stand motionless on the cross bar of the rudder gear or perched along the edges of the boat. They are fed daily, and during summer, when the occupation of wild fowl catching has ceased, serve the fishermen as food in the absence of anything better. Breeds throughout India from April to July, building nests on trees in small parties ; colour of eggs sea green ; size from 2·08 to 2·48 in length and 1·48 to 1·79 in breadth.

**209. Ardea purpurea**, *Linn.*, *Syst. Nat.* i. p. 236 ; *Jerd.*, *B. Ind.* iii. p. 743 ; *Hume*, *Nests and Eggs Ind. B.* p. 611 ; *Salvad.*; *Ucc. Born.* p. 345 ; *Blyth*, *B. Br. Burm.* p. 159 ; *Dresser*, *B. Eur.* vi. p. 217, pl. ; *Legge*, *B. Ceylon* p. 1132 ; *Oates*, *Str. F.* x. p. 243 ; *id.*, *B. Br. Burm.* ii. p. 245 ; *Murray*, *Vert. Zool.*, *Sind*, p. 269 ; *id.*, *Avif. Br. Ind.* ii. p. 653, No. 1346.—The BLUE HERON.

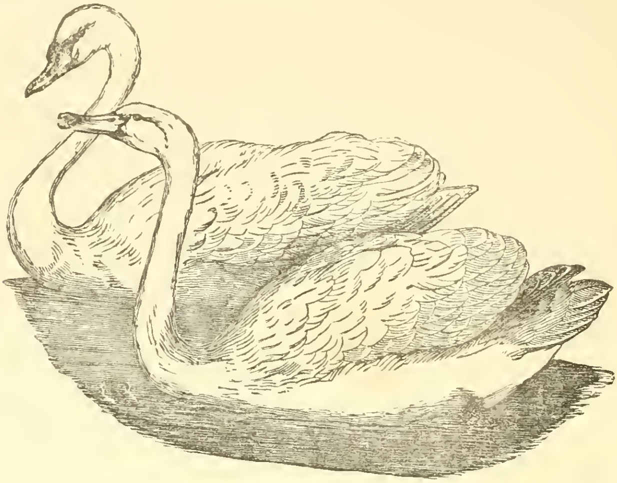
Head glossy black, with a lengthened black crest, the two middle feathers of which extend 3—4 inches beyond the rest ; sides of the head rusty yellow, with three longitudinal narrow black lines, one extends behind the head, and is continued down the neck, and two lateral ones from the eyes to the breast ; chin and throat white ; neck in front variegated with rufous black and purple, the feathers on the top of the breast long and acuminated, purplish white ; back, wings, and tail reddish ash ; scapulars purple, long, forming a brilliant plume on each side ; breast and flanks deep brownish red, rest of under parts a little paler. Bill deep yellow ; orbitar skin greenish yellow ; tarsus reddish brown.

*Length.*—36 to 42 inches ; wing 15·5 ; tail 5·75 ; bill at front 5·37 ; tarsus 5·25.

*Hab.*—Throughout India and Ceylon, extending into Burmah. Habits and nidification the same as those of the Common Heron. Natives are very partial to the flesh of this as well as of all the smaller Herons and Egrets.

## Family, CYGNIDÆ.—*Bp.*

Neck very long; legs moderate; front toes broadly webbed; hind toe not lobed; keel long; bill high at the base, with a fleshy or callous tubercle; cere extending to the eye; 2nd and 3rd quills of wing longest; tail short, rounded.



Cygnus olor. The Mute Swan.

**210. Cygnus olor** (*Gm.*), *Bodd., Tab. P. E.* 913; *Naum. Vogt. t.* 29; *Gould, B. Eur.* pl. 354; *Str. F.* vii. pp. 99, 101, 106; *Murray, Hdbk., Zool., &c., Sind*, p. 231; *id., Vert., Zool. Sind*, p. 282; *id., Avif. Brit. Ind.* ii. p. 671, No 1373.—The Mute Swan.

Entire plumage white; callous tubercle at base of upper mandible; legs, feet and cere black; bill reddish orange, the edges and tip black; irides dark brown.

*Length.*—48 to 52 inches. The following are the measurements of the three specimens obtained by Mr. H. E. Watson given in Mr. Blanford's paper on Wild Swans in Sind (*Str. F.* vii 101):—

| | No. 1. | No. 2. | No. 3. |
|---|---|---|---|
| Length from tip of bill to end of tail... | 58·5″ | 62·″ | 60·″ |
| Expanse ... | 78· | 84· | 82· |
| Closed wing... ... | 22· | 23· | ... |
| Tail from vent ... | 9·75 | 10·25 | 9·75 |
| Bill from gape ... | 3·75 | 3·8 | ... |
| Tarsus measured on inner side... | 3·8 | 4·2 | ... |

The female resembles the male in every particular, except that the callous tubercle is smaller.

This species was obtained on the Munchur Lake during an unusually severe winter in Sind, by Mr. H. E. Watson, Deputy Collector of Sehwan, shortly after I left the Lake in the same year (1878). In every instance, where the species has occurred, it was during an unusually severe winter. Mr. Hume, in his *Game Birds*, says—" It may be considered a pretty regular, though somewhat rare, cold weather visitant to the Peshawar and Hazara Districts, and an occasional straggler to the Kohat and Rawul Pindee Districts, and to the Trans-Indus portions of Sind.

It has occurred near Peshawar in 1857. In 1871, Captain Unwin obtained a specimen in the Rawul Pindee District. Dr. Stolickza in *J. A. S. B.*, 1872, p. 229, says—"While crossing the Runn of Cutch he noticed several swans but at too great a distance for it to be possible to form an idea as to the species the birds belonged to," "and from its occurrence in Sind," Mr. Hume says, "renders it not improbable that Dr. Stolickza was right."

Outside our limits this species has been seen in the Kabul river, near Jellalabad, and is known to visit Northern Afghanistan pretty regularly. Breeds in Western Turkistan.

Mr. Hume in his Tentative List and in *Str. F.* vii. pp. 107, 464, enters *Cygnus Bewicki*, in the List of the Birds of India, but as this entry as well as of *Cygnus musicus* and *Anser segetum* have been made on certain drawings by Hodgson and others, and there are no veritable records of their having been killed within our limits, I omit them from the Avifauna.

## Family, ANSERIDÆ.

Bill moderate, narrower in front than behind; keel elevated at the base, sloping to the tip; nail at point of bill horny and hard; legs moderate; knee bare; hind toe partially lobed; laminar teeth present.

### Sub-Family ANSERINÆ.

Characters same as those of the Family.

### Gen. Anser.—*Briss.*

Bill high at the base, rather long; lamina at edge wide and visible externally; nostrils in the nude cere, longitudinal.

211. **Anser cinereus,** *Meyer, Naum. Vogt.* t. 285; *Gould, B. Eur.* pl. 347; *Jerd., B. Ind.* iii. p. 779; *Str. F.* i. p. 258; iv. pp. 26, 197; vii. p. 494; viii. p. 421; *Hume and Marsh., Game Birds of Ind.* iii. p. 55; *Murray, Hdbk., Zool., &c., Sind*, p. 233; *id., Vert. Zool., Sind*, p. 283; *id., Avif. Brit. Ind.* ii. p. 673, No. 1374. (*Hans*, Sind.)—The Grey Lag Goose.

Head, hind neck and nape greyish brown, the feathers of the latter slightly darker and forming a conspicuous line on the neck behind, in some uniform

grey brown; chin, throat and breast on the upper part pale greyish brown; the breast below whitish, and barred on the sides with greyish; back and scapulars brown, the feathers margined at the tips with fulvous white, forming regular bars; greater wing coverts greyish brown, lesser slightly paler, both bordered with whitish; primaries white-shafted, the first three pale grey, the rest nearly dark brown; tail greyish, tipped with white. The plumage of this Goose is very variable. Of specimens I have, no two are alike. Mr. Hume also notices this fact and says—"In some the head and neck vary from pale ashy or earthy brown to dark clove brown; in most there is a mingled white and orange patch on the forehead; in some there is a similar spot at the base of the upper mandible on each side, the feathers of the head and cheeks are tinged with orange or rusty, and in most there is a small spot of white on the chin. In some specimens the breast and abdomen are closely blotched and mottled with black or blackish brown and pale rusty buff; in others the cap and back of the upper neck are conspicuously darker, as in the specimen before me, which has the entire breast a fulvous or soiled white, also the middle of the belly, while the flanks are brown and barred with fulvous."

Bill pinkish flesh colour, sometimes with an orange tinge; nail greyish white; irides greyish brown; legs livid fleshy.

*Length.*—30 to 32 inches; wing 17 to 18·5; tail 6; bill at front 2·4 to 2·8; tarsus 3 to 3·12.

*Hab.*—Sind, Afghanistan, Punjab, N.-W. Provinces, Oudh, Bengal, Rajputna, Kutch and Guzerat. Occurs throughout Europe. About the Munchur Lake in Sind they are met with in large parties, also along the canals, and especially the river.

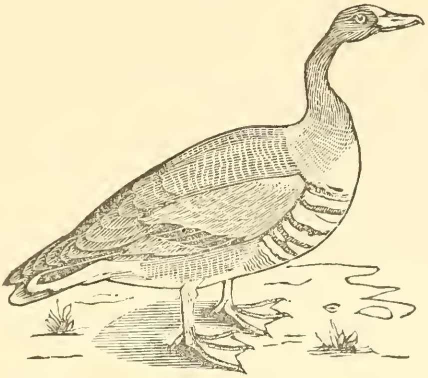
**212. Anser brachyrrhynchus** (*Baillon*), *Jerd.*, *B. Ind.* iii. p 780; *Hume and Marsh.*, *Game Birds* iii. p. 71; *id.*, *Avif. Brit. Ind.* ii. p. 673, No. 1375.—The PINK-FOOTED GOOSE.

Head and upper part of neck brown; lower part of neck reddish ashy; body above brownish cinereous with white undulations; longest scapulars edged with white; upper tail coverts black; lesser and median coverts bluish ashy, edged with white; two first primaries bluish, others black; tail black; breast and upper abdomen ashy whitish; lower abdomen and under tail coverts pure white. Bill much smaller than in the last, fleshy red or purplish, the base and the nail black; feet pinkish red. (*Jerd.*)

*Length.*—27 to 29 inches; wing 15·9 to 17; tail 5·5; bill at front 1·75; tarsus 3; middle toe 3.

*Hab.*—This is an extremely rare bird in India. Hume records a picture of one which was got in the Punjab, and also a statement that Colonel Irby killed one at Alumbagh near Lucknow. He has seen a pair among Grey Lags on a

sandbank in the Jumna, and an assurance has been given him by Col Graham that it is not uncommon on the Brahmaputra in Assam. This is all we know of its occurrence in India. In Northern Europe it is common, and probably also Central Europe and Northern Asia.



Anser albifrons. The White-fronted Goose.

**213. Anser albifrons**, *Gm.*, *Naum. Vogt.* t. 289; *Jerd.*, *B. Ind.* iii. p. 780; *Str. F.* i. p. 259; viii. p. 421; *Murray*, *Hdbk.*, *Zool.*, *&c.*, *Sind*; *Hume and Marsh*, *Game Birds*, *Ind.* p. 73; *Murray*, *Vert. Zool.*, *Sind*, p. 284; *id.*, *Avif. Brit. Ind.* ii. p. 674, No. 1376.—The White-fronted or Laughing Goose.

Forehead white or yellowish white, followed by a narrow dark band; chin the same; head, hind neck and nape brownish grey, shaded in some specimens with reddish; throat pale greyish white, darker in some; breast and flanks pale brownish, with cross bars of black, paler and whitish on the lower breast, with broader black bars; back dark greyish brown, the feathers with pale reddish brown edges; upper and under tail coverts white; tail with the middle feathers dark grey, tipped with white; the lateral ones entirely white; primaries ashy grey, dark at the tip; secondaries bluish black; tertiaries margined with dull white; greater and lesser wing coverts grey, edged with rufous; abdomen white; bill livid fleshy or purplish red, the middle of the upper mandible with an orange tinge; nail at tip white or yellowish white; legs and feet orange.

*Length.*—27 to 28 inches; wing 16 to 17; bill at front 1·7 to 1·9; tarsus 3.

*Hab.*—Sind, Beloochistan (Quetta), Persian Gulf (Bussorah), Afghanistan (Arghandab), Punjab, N.-W. Provinces and Oudh.

In Sind the White-fronted Goose is much more rare than the Grey Lag. Mr. Hume says "that about one bird of this species visits this empire, for every thousand of Grey Lags, or every five thousand of the Barred-headed Geese." In Egypt it is most abundant, also at Fao in Mesopotamia, and on the Caspian.

**214. Anser erythropus** (*Linn.*), *Newton, Ibis,* 2, p. 406; *Jerd., B. Ind.* iii. p. 781; *Hume and Marsh., Game Birds* iii. p. 77; *id., Avif. Brit. Ind.* ii. p. 675, No. 1377. A. minutus, *Naum. Vogt,* i. ?—The DWARF GOOSE.

Top of head, forehead, throat, front of cheeks and the under and upper tail coverts white; rest of head, neck and crop grey; scapulars and back dark brown grey, with transverse lighter bands; primaries and upper wing coverts blue grey, lower the same as the back and edged with white; secondaries black; tail grey, margined with white at the tip and white at the base; abdomen black, bordered with white; flanks dark grey brown, each feather *margined* lighter. Bill orange; feet and legs red. (*Jerd.*)

*Length.*—22 inches; wing 15; tail 4·5

*Hab.*—N.-W. Provinces and Oudh as a rare winter visitor. Outside our limits it is found in Northern and Central Europe.

**215. Anser indicus** (*Lath.*), *Gould, C. B.* pl. 80; *Jerd., B. Ind.* iii. p. 782; *Str. F.* iv. p. 499; vii. p. 491; viii p. 421; *Murray, Hdbk., Zool., &c., Sind,* p. 234; *Hume and Marsh., Game Birds, Ind.* p. 81; *Murray, Vert. Zool., Sind,* p. 285; *id., Avif. Brit. Ind.* ii. p. 675, No. 1378. (*Raj-hans,* Hind, Sind).—The BARRED-HEADED GOOSE.

Head and a broad line continued down the sides of the neck white, with a broad black band from behind the eye across the occiput, and a second one on the nape; chin and throat white; back of neck dark hair brown; front of neck the same, but rather paler and gradually passing into the ashy grey of the breast; upper back, scapulars, breast, upper abdomen and flanks in front ashy grey, the feathers margined with white and forming lunules of that colour; lower back, rump and wing coverts pale ashy grey; upper tail coverts, tip of tail feathers, lower abdomen, vent and under tail coverts white; axillaries pure ashy grey, feathers of the flanks behind the legs dark rufescent or snuff brown, margined at the tip with white; primaries white-shafted, the first four and all the primary coverts greyish, the rest and the tips of the first four as well as all the secondaries dark brown; wing coverts like the lower back and rump; bill orange, with a greenish tinge at the base; nail at the tip black; legs bright orange; bill at front 1·8 to 2.

*Length.*—27 to 28 inches; wing 16·5 to 18·5; tarsus 2·8.

*Hab.*—Sind, Punjab, N.-W. Provinces, Oudh, Central Provinces, and Bengal. A winter visitant.

This is certainly the most abundant Goose in Sind, and during the winter may be met in flocks of thousands on the large lakes, and on the Indus. On the Munchur it simply swarms, and not unlike the two other species, *albifrons* and *cinereus,* feeds during the night and in the early morning till about 9 or 10

o'clock. They feed exclusively on tender shoots of grass, and do much damage to the sprouting corn crops, especially in the neighbourhood of the Munchur, also in Lower Sind. Taking Upper India (including Sind), Hume says—"This species enormously outnumbers all the other species of Geese put together." I think at least five of the Barred-heads visit India to every one of the Grey Lags, and as for all the rest of the Geese, they are apparently so rare, that when one comes to consider numbers, they are not worth speaking about. * * * Their habits are similar to those of the Grey Lags. Where frequently disturbed they feed inland only at night; where rarely molested they will be found feeding up to eight or nine in the morning and again long before sunset. Preferentially they feed in fields in the neighbourhood of the larger rivers, browsing on the young wheat, vetches, lentils, &c. They are not difficult to bag, especially in localities where they are not disturbed by shooting. Walking besides a pony, or bullock, one can always get within 35 or 40 yards of a flock, and bag at least a dozen birds with a couple of effective shots. In localities which have been frequently shot over the birds are very wary, and unless there is plenty of cover a buffalo or pony becomes a necessity." In such cases," as Mr. Hume says, "it is best to make sure of your one or two birds on the ground with the first shot, as you will seldom have time for more than one shot after they rise." Mr. Hume, in his *Game Birds of India*, gives many hints as to shooting geese and wild fowl generally. The habits of the Duck tribe and the various methods adopted for netting them are very interesting, and of much value to sportsmen generally.

## **Family,** ANATIDÆ.—*Vigors.*

Bill flat and broad, laminated at the sides; food insects and tender aquatic plants, which they obtain in shallow muddy places.

## **Sub-Family,** PLECTROPTERINÆ.—*G. R. Gray.*

Bill long and broad, tip horny; knee and above bare; tarsi with squarish scales; hind toe long; wing with one or more spurs on the shoulder; a fleshy carbuncle at base of upper mandible; plumage glossy black.

### Gen. **Sarkidiornis**.—*Eyton.*

Characters those of the Sub-Family; 1st and 2nd primaries sub-equal and longest.

**216. Sarkidiornis melanonotus,** *Penn. in Forst. Ind. Zool.* p. 21, pl. 11; *Newton, Str. F.* viii. p. 415. Sarcidiornis melanonota, *Jerd., B. Ind.* iii. p. 785; *Hume, Nests and Eggs Ind. B.* p. 636; *Blyth, B. Burm.* p. 165; *Hume and Marsh., Game Birds* iii. p. 91, pl.; *Legge, B. Ceylon,* p. 1063; *Oates, B. Br. Burm.* iii. p. 275; *Murray, Vert. Zool., Sind,* p. 286; *id., Avif. Brit. Ind.* ii. p. 677, No. 1379.—The Comb Duck.

Top of the head and back of neck black, spotted with white, more so on the back of the neck; cheeks, sides and front of the neck white, with a few black spots; breast and entire under parts white; chin and throat white; back, scapulars, tertiaries and wing coverts glossy black, glossed with purple; upper tail coverts glossed greenish; primaries and secondaries black; the lesser wing coverts glossed with purplish green; tail black; bill of male with a fleshy protuberance; irides dark brown; bill black.

*Length.*—28 to 30 inches; wing 13 to 15; tail 6. Female is smaller, and less brightly coloured.

*Hab.*—Sind, Punjab, N.-W. Provinces, Oudh, Bengal, Rajputana, Kutch, Kattiawar, Guzerat, Concan and Deccan, South India and Ceylon; also British Burmah.

A straggler in Sind. Breeds in the N.-W. Provinces during July and August. In Ceylon it is said to breed from January to March, usually on trees in the proximity of large sheets of water.

**217. Nettapus coromandelianus** (*Gmel.*), *Jerd.*, *B. Ind.* iii. p. 786; *Blyth, B. Burm.* p. 165; *David et Oust. Ois. Chine.* p. 501; *Legge, B. Ceylon*, p. 1066; *Hume and Marsh., Game Birds* iii. p. 101, pl.; *Oates, B. Br. Burm.* ii. p. 272; *id., Avif. Brit. Ind.* ii. p. 677, No. 1380. Anser coromandeliana, *Gmel., Syst. Nat.* i. p. 522. Nettapus coromandelicus (*L.*), *Hume, Nests and Eggs, Ind. B.* p. 638. Nettapus coromandus (*L.*), *Hume, Str. F.* iii. p. 192.—The COTTON TEAL.

Forehead, crown and nape hair brown, remainder of the head, whole neck and lower plumage white; collar round the neck black in front, glossy green on hind neck; a second demi-collar from the breast upwards below this; under tail coverts dark brown mottled with white; upper plumage glossy green; the secondaries are broadly tipped with white and the primaries also, their basal halves are dark brown; upper tail coverts white, freckled with brown; tail brown; under wing coverts greenish black. The female has a line from the lores through the eye dusky black, surmounted by a dirty white supercilium; rest of the head, whole neck and the upper breast dull white mottled wih brown; lower plumage dull white; upper tail coverts white, freckled with brown. In winter the male is like the female, but has always the white patch on the primaries. Bill black; irides red.

*Length.*—13 inches; tail 3; wing 6·5; tarsus 1; bill from gape 1·1.

*Hab.*—Nearly throughout India, also Ceylon and Burmah, except the drier regions as Sind, Kutch, Rajputana. Breeds in July and August, in the holes of trees, laying from 8 to 10 eggs, of a delicate ivory white colour. They generally affect swamps, marshes, and inundated ponds and ditches.

## Sub-Family, TADORNINÆ (Anatinæ, *Sw.*)

Plumage rufous; bill flattened towards the tip, with horny termination; hind toe long and slighty lobed.

### Dendrocygna, *Sw.*—Whistling Ducks.

Bill rather large, of uniform width; secondaries long, also the tarsi; 2nd, 3rd and 4th primaries sub-equal and longest.

**218. Dendrocygna Javanica** (*Horsf.*), *Hume and Dav.*, *Str. F.* vi. p. 486; *Legge, B. Ceylon*, p. 1069; *Hume and Marsh.*, *Game Birds* iii. p. 109, pl.; *Oates, B. Br. Burm.* ii. p. 273; *Murray, Vert. Zool.*, *Sind*, p. 287; *id.*, *Avif. Brit. Ind.* ii. 678, No. 1381. Anas javanica, *Horsf.*, *Trans. Linn. Soc.* xiii. p. 199. Dendrocygna aswuree, *Jerd.*, *B. Ind.* iii. p. 789. Dendrocygna arcuata (*Cuv.*), *apud Hume*, *Nests and Eggs Ind B.* p. 639; *Oates*, *Str. F.* v. p. 169.—The Lesser Whistling Teal.

Top of head and occiput dull wood brown, and a narrow streak of the same continued down the middle of the back of the neck from behind the nape; sides of the face and neck fulvous brown; chin and throat albescent; lower neck and breast yellowish chestnut, gradually passing into the light chestnut of the under surface of the body; vent and under tail coverts albescent; back and scapulars dusky brown, the feathers edged with dingy fulvous chestnut, forming lunules; upper tail coverts chestnut; tail brown, tipped slightly paler; primaries and secondaries black; greater coverts and tertiaries dusky brown; lesser and median coverts deep maroon; axillaries black; bill dusky brown, darker at the tip; irides deep brown; eyelids bright yellow to pale golden; legs plumbeous.

*Length.*—17·5 to 18 inches; wing 8 to 8·5; tail 2 to 2·12; bill at front 1·5; tarsus 1·75.

*Hab.*—Sind, Punjab, N.-W. Provinces and the Indian Peninsula generally, but not in the more arid tracts, where water is not abundant, as in the interior of Rajputana. According to Hume, there is scarcely any suitable locality within the limits of the Indian empire, including Burmah, Ceylon, the Andamans and Nicobars, in which this species does not occur either as a permanent resident or a seasonal visitant. It is essentially a tree duck, and in the breeding season especially affects the larger pieces of water, in the vicinity of trees. At other times it is found in nearly every suitable piece of water. It nidificates on trees, making a nest of twigs, &c., or occupying old nests of Herons and Ibises. In Sind it has been found breeding in great numbers on the Eastern Narra, and I have taken a nest of 11 eggs at the One Tree Tank, six miles from Kurrachee. Mr. Doig, who took its eggs in the Narra, found 10

as the greatest number from any one nest. "The nests," he says, "were composed of green twigs, and in some instances of leaves of the large bulrush trodden down to make a platform." Mr. Hume (*Game Birds*) records instances of the curious fact of this species carrying its young in its feet from the nest to the water. Mr. Kemp in the Futtehpore District adds his testimony to the fact, having obtained an egg from off a narrow ridge where the bird was seen to carry it just before he shot it. Mr. Hume says—He heard of their being seen flying down to the water with ducklings on their backs, and that twice he saw them carrying these in their claws. On one of these occasions, between 8 and 9 A. M., he saw a duck carry down her whole brood of seven, one at a time, from a hole in a huge mango tree to the water, she passing each time within three yards of his face.

**219. Dendrocygna fulva** (*Gmel.*), *Sclater and Salv.*, *P. Z. S.* 1876, p. 372; *Hume and Marsh.*, *Game Birds* iii. p. 119, pl.; *Oates*, *B. Br. Burm.* ii. p. 274; *id.*, *Avif. Brit. Ind.* p. 679, No. 1382. Anas fulva, *Gmel.*, *Syst. Nat.* i. p. 530. Dendrocygna major, *Jerd.*, *Madras Journal*, 1840, p. 218; *id.*, *Ill. Ind. Orn.* pl. xxiii.; *Hume*, *Str. F.* iii. p. 193.—The Larger Whistling Teal.

Top of head and sides of the face rufescent brown, slightly paler on the cheeks; chin and throat albescent, a broad ring or patch of white in the middle of the neck; a broad black line down the back of the neck from below the nape; back, scapulars, primaries, secondaries, tertials and greater wing coverts dark brown, the feathers of the back with rufescent or chestnut edging, forming lunules; lesser wing coverts dark maroon; breast yellowish chestnut, gradually passing into the light chestnut of the under parts of the body; vent, under and upper tail coverts white or fulvous white; tail dark brown; bill plumbeous; irides brown; legs and feet plumbeous.

*Length.*—20·5 to 21 inches; wing 9·25; tail 2·5 to 2·8; bill from gape 2 to 2·4; tarsus 2·25.

*Hab.*—Sind, Punjab, N.-W. and Central Provinces, Oudh, Bengal, Rajputana, Kutch, Guzerat, Concan and Deccan, also S. India and Ceylon in suitable localities; also Burmah.

### Gen. **Casarca**.—*Bp*

Bill moderate; culmen with a knob at the base; nail at tip large; hind toe lobed; wing spurred; plumage from buffy orange to bright orange.

**220. Casarca rutila**, *Pall.*, *Hist. d' Egypt.* t. x. p. 1; *Gould*, *B. Eur.* pl. 358; *Jerd.*, *B. Ind.* iii. p. 791; *Str. F.* i. p. 260; iv. 198; *Murray*, *Hdbk.*, *Zool.*, *&c.*, *Sind*; *Hume*, *Game Birds. Ind.* p. 123; *Murray*, *Avif. Brit. Ind.* ii. p. 680, No. 1383. Tadorna casarca, *Dresser*, *B. Eur.* vi. p. 461,

pl.; *Legge, B. Ceylon*, p. 1070; *Oates, B. Br. Burm.* ii. p. 277. (Vern. *Mungh*, Sind).—The RUDDY SHELLDRAKE or BRAHMINY DUCK.

*Male.*—Head, on the crown and sides buff, darkening on the nape and hind neck, and gradually passing into deep orange or orange fulvous on the upper back and breast; a seasonal glossy black band round the middle of the neck in males (not present in all specimens); chin buff; upper back, scapulars and breast in front deep orange brown, orange fulvous, or rufescent, the colour being variable; in some specimens the feathers are edged paler; lower back ochreous, the feathers finely vermiculated with black; rump black, also the upper tail coverts and tail, which have a greenish gloss; lower abdomen and under tail coverts deep chestnut; in females and in males out of season, and without the black neck collar, the entire under surface from the breast is pale chestnut or fulvous chestnut, sometimes with the feathers round the vent darkening into deeper chestnut; wing spurred at the bend; primaries dark brown; greater coverts and outer webs of secondaries glossy purplish green, forming a broad speculum; lesser and median covers white, sometimes with a buffish tinge; tertials like the back, some of the feathers finely vermiculated with brown at the tips; under wing coverts and axillaries white, also the edge of the wing.

The *female* wants the black collar at all seasons, and is generally duller in colour, the head being very pale buffy white; the crown and neck in some mouse grey; bill black; irides dark brown; legs black.

*Length.*—*Males*, 24·5 to 27 inches; wing 14·5 to 15·5; tail 5·5 to 6; tarsus 2 to 2·4; bill at gape 2.

*Hab.*—Sind, Persia, Beloochistan, Afghanistan, E. Turkestan, Punjab, N.-W. Provinces, Oudh, Nepaul, Bengal, Rajputana, Central India, Kutch, Guzerat, the Concans, Deccan and Southern India.

The Ruddy Shelldrake is a winter visitant to India. In Sind it is found on all the large lakes and brooks and along the Indus river in great numbers; and on the Munchur especially; like geese, large parties resort to the fields of sprouting wheat in the early morning and at night-fall, and do much damage.

They are extremely shy and wary birds, and as Mr. Reid, in *Game Birds*, remarks—"It will not only keep a sharp look-out on its own account, but will fly along the Jheel side before the gunner, uttering its warning note and put every bird on the *qui vive*."

**221. Casarca scutulata** (*P. L. Mull*), *Schlege., Mus. P. B. Anseres*, p. 64; *id., Avif. Brit. Ind.* ii. p. 680, No. 1384. Sarcidiornis leucopterus, *Blyth, J. A. S. B.* xviii. p. 820. Casarca leucoptera, *Jard., Contr. Orn.* p. 141, pl. 64; *Jerd., B. Ind.* iii. p. 793; *Blyth, B. Burm.* p. 165. Anas

scutulata, *Hume and Marsh.*, *Game Birds* iii. pp. 147. Anas leucoptera, *Oates*, *B. Br. Burm.* ii. p. 281.—The WHITE-WINGED WOOD DUCK.

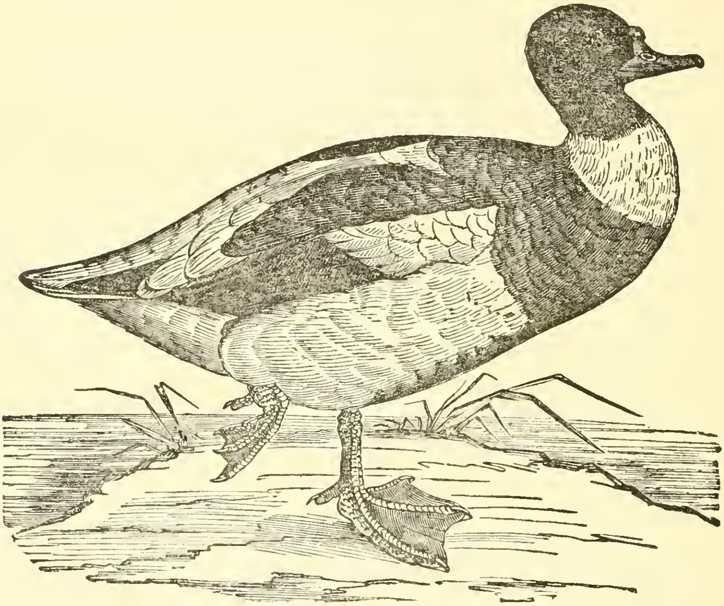
Head and neck white, profusely mottled with black; hind neck glossy black; remainder of the upper plumage blackish brown; shoulders and wing coverts white; greater coverts black; primaries dusky; secondaries slaty; tertiaries dusky, the outermost ones bordered with white and forming a white longitudinal line in the closed wing; breast glossy black; lower plumage dusky castaneous, dark brown on the flanks and under tail coverts; bill and legs black. (*Jerd.*)

*Length.*—28 inches; wing 15; tail 6; bill at front 3; tarsus 2·5; mid-toe 3·25.

*Hab.*—Tenasserim at Tavoy and at Mergui. Oates says it occurs in Assam and in the hill tracts of Eastern Bengal, in the northern part of the Malay Peninsula and in Java.

## Gen. **Tadorna**,—*Leach.*

Bill short, high at the base, and with a knob; wing tuberculated; nail at tip of bill rather hooked.



Tadorna cornuta, *Gm.* The Shelldrake.

222. **Tadorna cornuta** (*Gm.*), *Syst. Nat.* i. p. 524; *Bodd.*, *Tab. P. E.* 53; *Naum. Vogt.* t. 298; *Gould*, *B. Eur.* pl. 357; *Hume*, *Game Birds*, p. 136; *Murray*, *Vert. Zool.*, *Sind*, pp. 289, 290; *id.*, *Avif. Brit.*

*Ind.* ii. p. 682, No. 1385. Tadorna vulpanser (*Fleming*), *Jerd.*, *B. Ind.* iii. p. 794; *Murray*, *Hdbk.*, *Zool.*, *&c.*, *Sind*, p. 235.—The SHELLDRAKE OR BURROW DUCK.

Head, sides of the face, chin, throat, and about one-half of the neck all round deep black, with glossy green reflections; below this the neck all round is white, as are also the back, wing coverts, rump, upper tail coverts and tail, the latter tipped with black; a broad band of ferruginous or orange chestnut across the breast, meeting above on the foreback; under surface white, except a mesial band in the middle of the abdomen; primaries black; greater coverts forming the speculum, and outer webs of the secondaries glossy golden green; upper secondaries chestnut on their outer webs; tertiaries and scapulars black; bill blood-red, with a knob at the base of the upper mandible; nail black; bill deep red; irides brown; legs fleshy red.

*Length.*—23·25 inches; wing 12 to 13·5; tail 4·75 to 5·5; tarsus 2 to 2·3. Females average 20 to 22 inches in length, and are much duller in colour.

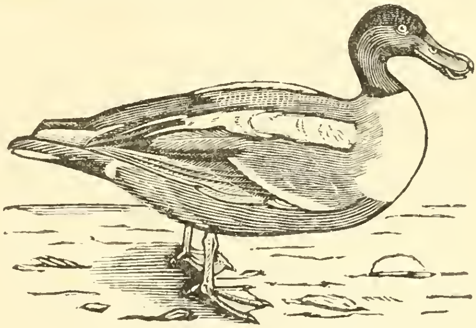
*Hab.*—Sind, Beloochistan, Persia, Afghanistan, E. Turkestan, Punjab, N.-W. Provinces, Oudh, Bengal, Kutch and Kattiawar Coast. Except in large lakes, the Shelldrake is only found on the sea-coast in the neighbourhood of the sea, which is its proper home.

## Sub-Family, ANATINÆ.

Hind toe small, not bordered by a membrane; bill even in width throughout, or wider at the tip; lamellæ numerous, fine and bristly.

### Gen. Spatula,—*Boie.*

Bill longer than the head, narrow at the base, broad at the tip, shovel-like; nail small; lamellæ fine and bristly.



Spatula clypeata. The Shoveller.

**223. Spatula clypeata** (*Linn.*), *Bodd. Tab. P. E.* pp. 971 972; *Gould*, *B. Eur.* pl. 300; *Jerd*, *B. Ind.* iii. p. 796; *Str. F.* iv. p. 199; *Murray*,

*Hdbk., Zool., &c., Sind*, p. 235; *id., Vert. Zool. Sind*, p. 290; *Hume and Marsh., Game Birds Ind.* p. 141; *Murray, Avif. Brit. Ind.* ii. p. 682, No. 1386. (*Vern., Alipat*, Sind.)—The SHOVELLER.

*Male.*—Head and neck all round deep or dark brown with glossy green reflections; back brown; scapulars and breast white; rump and upper tail coverts glossy brown black; sides of the rump white; tail brown, the outer feathers white, the rest edged with white; primaries dusky brown, white-shafted; secondaries the same, their outer webs rich bright green and forming the speculum; lesser wing coverts pale blue; greater wing coverts dusky brown, tipped with white, forming a bar across the wing; tertials long and pointed, pale blue on their outer webs, purplish black on the inner ones, the tips of some of the elongated ones white; abdomen rich chestnut brown or brownish red; lower tail coverts black, glossed greenish; flanks chestnut brown, the feathers finely vermiculated with dark brown; bill black; legs orange; irides yellow.

*Length.*—19 to 20 inches; wing 9 to 10; tail 3·5 to 4; tarsus 1·2 to 1·4; bill from gape 2·9 to 3.

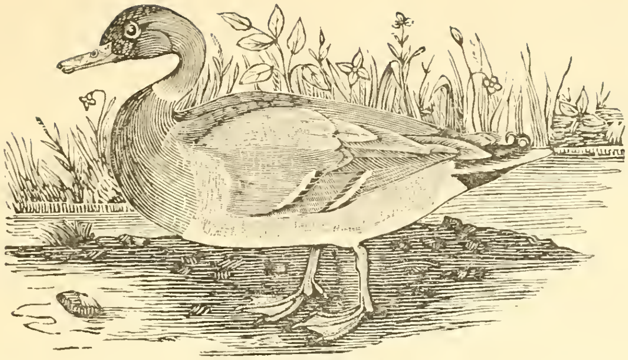
The *female* is slightly smaller, averaging 19 inches in length at the outside; wing 8 to 9. The head is pale reddish brown, with dusky shaft-streaks; breast pale brownish rufous, with dusky brown spots; back dusky brown, the edges and tips of the feathers paler and rufous white; lesser wing coverts tinged with pale blue; speculum green, and a white bar across the wing as in the male.

*Hab.*—Sind, Belochistan, Persia, Afghanistan, Nepaul, Cashmere, Eastern Turkestan, Punjab, N.-W. Provinces and Oudh, Bengal, Central India, Rajputana, Kutch, Guzerat, Concan, Deccan, South India, and Ceylon.

Winter visitors to India, affecting all the lakes, marshes, ponds, &c., feeding on worms, larvæ, tadpoles, seeds, and young shoots of aquatic plants. They are not naturally shy, as in village ponds they are frequently seen dabbling about, or standing in the shallow edge of ponds, while the inhabitants are drawing water or bathing.

## Gen. **Anas**, *Linn.*

Bill slightly longer than the head, of nearly uniform width throughout; tertials long and pointed; tail wedge-shaped; nostrils near the base of the bill; middle tail feather curled.



Anas boscas. The Mallard.

**224. Anas boscas** (*Linn.*), *Bodd. P. E.* pp. 776, 777; *Gould, B. Eur.* pl. 361; *Jerd., B. Ind.* iii. p. 798; *Str. F.* i. p. 261; iv. p. 199; *Murray, Hadbk. Zool., &c., Sind*, p. 235; *id., Vert. Zool. Sind*, pp. 291, 292; *Hume and Marsh., Game Birds Ind.* p. 151; *Murray, Avif. Brit. Ind.* ii. p. 684, No. 1387. (*Vern. Niroji*, Sind).—The MALLARD.

*Male.*—Head and upper half of neck rich dark metallic glossy green, succeeded by a white ring; lower down on the back of the neck greyish chestnut brown, with fine transverse greyish waved lines; back above or mantle chestnut brown, the feathers margined slightly paler; scapulars greyish white, the feathers finely marked with transverse wavy brown lines, the outermost ones chestnut; rump and upper tail coverts blackish green, the sides of the former greyish white, finely vermiculated with brownish; primaries greyish brown, also the secondaries, the outer webs of which are rich shining purple, margined by a velvetty black band and tipped with white, the speculum formed by the shining metallic purple patch is bounded on each side with a bar of black and white; tail with the four middle feathers velvetty black, glossed with greenish, and curled upwards, the rest greyish brown, bordered with white; lower neck and breast deep chestnut; rest of lower parts greyish white, tinged in some specimens with dull yellowish, and marked with close-set transverse undulating brown lines, indistinct in many, and in others strongly marked; under tail coverts velvetty black; bill dingy olive, greenish at the tip; nail at the tip black; irides brown; legs and feet reddish orange to vermilion.

*Length.*—22·5 to 24·5 inches; wing 10·75 to 11; tail 4·2 to 4·8; tarsus 1·6 to 1·9. The *female* is smaller, averaging 21 inches in length.

*Hab.*—Sind, Beloochistan, Persia, Afghanistan, Punjab, N.-W. and Central Provinces, Oudh, Bengal, Rajputana, Kutch, Guzerat, the Concans, and a straggler in the Deccan.

**225. Anas pæcilorhyncha**, *Forst., Ind. Zool.* p. 23, pl. 13; *Jerd., B. Ind.* iii. p. 799; *Hume, Nests and Eggs Ind. B.* p. 643; *Blyth, B.*

*Burm.* p. 165; *Hume and Marsh., Game Birds* iii. p. 165, pl.; *Legge, B. Ceylon* p. 1073; *Murray, Vert. Zool. Sind,* p. 292; *Oates, B. Br. Burm.* ii. p. 282; *Murray, Avif. Brit. Ind.* ii. p. 684, No. 1388.—The SPOTTED BILLED DUCK.

Top of head to the nape behind dark sepia brown, also a line from the base of the upper mandible through the eye, ending in a point behind; supercilium, sides of the face and neck dingy fulvous, minutely speckled with brown; lower neck, breast and abdomen the same, the brown spots larger than on the upper neck, and increasing in size on the breast, abdomen and flanks; chin and throat unspotted fulvous; upper back, scapulars and lesser and median wing coverts hair brown; lower back and rump black; primaries deep brown; secondaries brown on their inner webs; speculum on their outer webs, rich emerald glossy green, tipped with black, the black tips of the innermost narrowly edged with white; greater wing coverts sepia brown at base, with a subterminal white band and tipped with black; tertiaries white on their outer webs and hair brown on their inner; tail deep brown, the central feathers darker; vent and under tail coverts nearly black; under wing coverts white; bill black, with a spot of red at the base, and yellow at the tip; legs and feet vermilion red; irides deep brown.

*Length.*—23·5 to 25·9; wing 10·5 to 11; tail 4·75 to 5·75; tarsus 1·85 to 1·93; bill from gape 2·5 to 2·75. Females are slightly smaller.

*Hab.*—A permanent resident in India. Breeds in Sind and the Punjab. Found in large numbers in Sind, Beloochistan, Persia, the drier parts of the Punjab and Rajputana, also in the N.-W. and Central Provinces, Oudh, Kutch, Guzerat and the Deccan.

Affects large lakes, ponds, brushy or weedy tanks, and often the banks of rivers, feeding on worms, molluscs, insects, larvæ, young shoots of grass, &c. Mr. Hume says (*Game B.* iii. p. 168) "that the breeding season of this duck varies a great deal with locality;" in the N.-W. Provinces and Oudh, also the eastern portions of Rajputana and the Punjab, July, August and September are the months; in Guzerat, October. In Sind Mr. Doig obtained eggs at the latter end of April and May on a small island covered with long grass in the middle of the Narra.

**226. Anas caryophyllacea,** *Lath., Ind. Orn.* ii. p. 866; *Jerd., B. Ind.* ii. p. 800; *Hume, Nests and Eggs Ind. B.* p. 644; *Blyth, B. Burm.* p. 165; *Murray, Avif. Brit. Ind.* ii. p. 685, No. 1389 Rhodonessa caryophyllacea, *Hume, Str. F.* viii. p. 115; *Hume and Marsh., Game Birds* iii. p. 173, pl.; *Oates, B. Br. Burm.* ii. p. 284.—The PINK-HEADED DUCK.

Whole head, sides and back of the neck rosy pink; entire front of neck, lower plumage, back, rump, upper tail coverts, tail, upper wing coverts, scapulars and tertiaries dark glossy brown; secondaries salmon colour, forming a speculum; primaries brownish salmon colour, paler on the inner webs; edge of

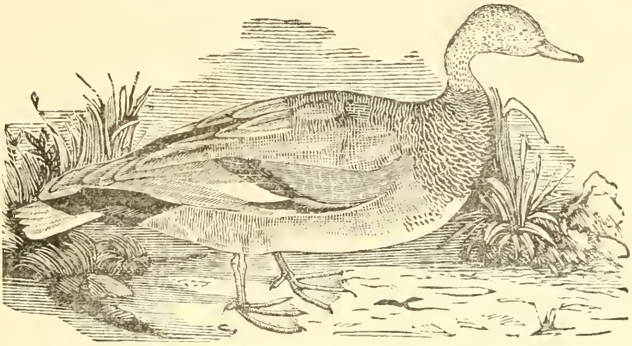
wing broadly whitish ; under wing coverts pinkish white. Bill reddish white, rosy at base and faintly bluish at tip ; irides orange red ; legs and feet blackish, tinged with red.

*Length.*—23 inches ; tail 4·5 ; wing 11 ; tarsus 2 ; bill at front 2·3.

*Hab.*—Arracan, part of the Indian Peninsula and Assam. Breeds during June and July in swampy places. Eggs 5 to 10.

### Gen. Chaulelasmus.—*Gray.*

Bill as long as the head, of uniform width, except towards the tip, where it is slightly narrowed ; nail small ; lamellæ projecting and delicate ; wings and tail long ; central tail feathers rather elongate.



Chaulelasmus streperus. The Gadwall.

**227. Chaulelasmus streperus** (*Linn.*), *Bodd, Tab. Pl. Enl.* p. 958 ; *Gould, B. Eur.* pl. 366 ; *Jerd., B. Ind.* iii. p. 802 ; *Dresser B. Eur.* vi. p. 487, pl. ; *Hume, Str. F.* viii. p. 115 ; *Scully, t. c.*, p. 362 ; *Hume and Marsh., Game Birds* iii. p. 181, pl. ; *Murray, Vert. Zool. Sind*, p. 293 ; *Oates, B. Br. Burm.* ii. p. 283 ; *Murray, Avif. Brit. Ind.* ii. p. 686, No. 1390. Anas strepera, *Linn., Syst. Nat.* i. p. 200 ; *Blyth, B. Burm.* p. 166.—The Gadwall.

*Male.*—Head and neck fulvous or greyish white, freckled with brown ; crown of the head with a slight yellowish tinge ; chin and throat greyish white, finely speckled with brown ; breast brown, with white crescent-shaped lines on each feather ; abdomen white, minutely speckled with greyish brown ; the flanks variegated with undulations of brown and white ; back above clove brown, with narrow crescentic undulations ; scapulars with narrow undulations of brown and white ; rump and upper tail coverts bluish black, with a purplish gloss ; lower tail coverts glossy black, tinged with green ; tail brownish grey, the edge of the feathers paler or fulvous, the two central feathers pointed ;

primaries dark brown; secondaries nearly black; the speculum a tri-coloured bar of purple red, black and white, except the four first feathers, which are grey at base and black at the tip; tertials brownish grey; greater wing coverts glossy black; lesser wing coverts grey, marbled with yellowish or fulvous white; median coverts rich chestnut brown, varied in some with orange brown, the tips of the feathers nearest to the speculum broadly bordered with black; bill brownish black or dusky leaden, tinged with reddish beneath; irides dark brown; legs pale orange.

*Length.*—19·5 to 22·5; wing 10.75 to 11·5; tail 3·9 to 4·2.

The *female* is smaller, has a light superciliary streak; the head on the crown is black mixed with greyish white; sides of the face fulvous white with brownish streaks; neck in front spotted with dark brown, and marked on the breast with crescentic bands of dark and pale brown; chin and throat white; abdomen white; back deep dusky brown, the feathers edged with buff; lesser wing coverts greyish brown, edged paler; speculum dull white; tail dark brown, marbled with pale buff, brown and white.

*Hab.*—Central and South Europe, and nearly throughout India; found in Sind, Beloochistan, Afghanistan, and Persia; also in the Punjab, N.-W. and Central Provinces, Oudh, Bengal, Central India, Kutch, Guzerat, the Concans and Deccan; recorded also from Nepaul, Gilgit, and E. Turkestan; it is also met with on the Continent of Europe, in Spain and Italy, also in Iceland and Siberia, as well as in the northern parts of Africa and India generally. In Sind it is numerous on the lakes, dhunds, &c., during winter, and especially on the Munchur, arriving about the middle of November.

Gadwall are considered excellent for the table, especially during the first two months of their arrival, when they usually feed on rice and young shoots of the sprouting wheat crops. Later on they affect the jheels and feed on crustaceans and fry of fish, and though then rather fishy in taste, the flesh is not despised when better game is not to be had. The localities preferred by the Gadwall after dusk are generally lakes, jheels and ponds covered with long herbage, but during the day it frequents open water, as the broads of the Indus.

**228. Chaulelasmus angustirostris** (*Menetries*), *Bp. F. Ital.* t. 47, i., 2; *Gould, B. Eur.* pl. 373; *Str. F.* i. p. 262; iii. p. 273; vii. pp. 493, 523; *Murray, Hdbk., Zool, &c., Sind,* p. 235; *Hume, Game B. Ind.* p. 237; *Murray, Vert. Zool. Sind,* p. 294; *id., Avif. Brit. Ind.* ii. p. 687, No. 1392.—The Marbled Teal.

"The male has the forehead, crown, occiput, and nape brownish white, with numerous narrow, close-set, wavy, irregular, dark brown bars, which become more speckly on the occiput, where also the ground colour is a more rufescent brown; feathers immediately round the eye very dark brown; a broad irregular stripe over the eye, and a large patch on the side of the head behind the

eyes, moderately dark brown, shading into the very dark brown immediately surrounding the eyes; the whole space between the sides of the upper mandible and the dark feathers surrounding the eye, the whole sides of the head below the dark eye and ear patch, the whole chin, throat and front of the neck, slight greyish or brownish white, very narrowly, regularly and closely streaked with brown; the lower parts a slightly brownish white; the breast feathers with greyish brown subterminal transverse bars, mostly more or less concealed by the pale tippings of the superincumbent feathers, and only clearly seen when the feathers are lifted; the sides and flanks similar, but the subterminal bars much broader, and some of the flank feathers with several bars; the vent feathers and lower tail coverts, generally, with a slightly more rufescent tinge, and with two or more narrow, widely separated transverse brown bars; the tibial plumes browner, and with numerous narrow closely-set but ill-marked transverse brown bars; the abdomen more or less obsoletely mottled with very pale grey brown, which on lifting the feathers is found to arise from more or less faint, irregular, transverse, subterminal, brownish bars.

"The barrings above described are very much more marked in some specimens than in others; in some in fact they are almost entirely obsolete on the abdomen, and can hardly be traced.

"The upper back greyish brown, the feathers with a subterminal richer brown bar; scapulars brown, each feather with a yellowish white terminal spot, and of a much richer brown, the longer ones especially, just above the spot; the tertiaries and secondary greater coverts are greyish brown, the former obsoletely barred paler; the secondaries are pale grey; the primaries, their greater coverts, and the winglet pale slaty, the primaries with a silvery grey tinge on the outer webs towards the tips; the inner webs pale grey brown, except towards the tips, where they are much darker, and where the shafts also are conspicuously darker; the middle back, rump, and upper tail coverts the same grey brown as the upper part of the back; the feathers of the middle back narrowly and obscurely tipped with yellowish white, those of the rump and upper tail coverts more broadly and conspicuously so, and with a subterminal dark brown spot; the longest of the upper tail coverts are very broadly and conspicuously so tipped, and have a subterminal dark band; the tail feathers pale grey brown, broadly tipped, and narrowly margined with yellowish white; the two central tail feathers darker on the inner webs and dark shafted, and the lateral tail feathers paling as they recede from the centre.

"The female is similar, but smaller, with the eye patch and generally all the markings and tints duller and less conspicuous.

"The legs and feet are dusky olive or dark horny brown; bill bluish grey, black on culmen and tip, or dusky, bounded at the margins of the feathers of the forehead and cheeks with a pale, leaden blue line continued along the

margin of both mandibles to near the tip, and a spot of the same colour just above the nail; the irides are brown.

"The dimensions of this species are as follows:—

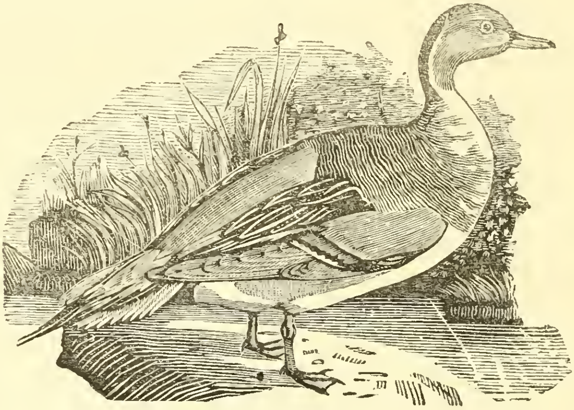
"*Male.*—*Length* 18·3 to 19; expanse 28·5 to 29·5; tail from vent 3·6 to 4; wing 8·1 to 8·5; wings when closed reach to within 0·7 to 1·5 of end of tail; bill at front, including nail, 1·77 to 1·85; tarsus 1·44 to 1·52; weight 1·3 oz. to 1·5 oz.

"*Female.*—*Length,* 16·9 to 17·5; expanse 27 to 28; tail from vent 2·8 to 3·7; wing 7·9 to 8·1; wings when closed reach to within from 0·5 to 1 of end of tail; bill at front 0·6 to 0·75; tarsus 1·4 to 1·5; weight 1 lb. to 1 lb. 3 oz." —(*Str. F.* i. p. 562.)

*Hab.*—Sind, Beloochistan, Persia, S. Afghanistan, Lower Punjab, N.-W. Provinces, Oudh and Bengal; extremely abundant after October; much sought for the table. Feeds chiefly on leaves, roots, fresh water molluscs, &c.

Gen. **Dafila** (*Leach*), *Gray, Gen. Birds,* iii. p. 615.

Tail with the central feathers narrow and much lengthened beyond the rest; neck long; bill elevated at the base, of nearly uniform width; 1st primary of wing longest.



Dafila acuta. The Pintail.

**229. Dafila acuta** (*Linn.*), *Jerd., B. Ind.* iii. p. 803; *Dresser, B. Eur.* vi. p. 531, pl.; *Hume, Str. F.* iii. p. 193; *Scully, Str. F.* iv. p. 200; *id., Str. F.* viii. p. 363; *Hume and Marsh., Game Birds* iii. p. 189, pl.; *Oates, Str. F.* x. p. 245; *Murray, Vert. Zool., Sind,* p. 297; *Oates, B. Br. Burm.* ii. p. 279; *Linn., Syst. Nat.* i. p. 202; *Blyth, B. Burm.* p. 166; *Legge, B. Ceylon,* p. 1076; *Murray, Avif. Brit. Ind.* ii. p. 689, No. 1393.—The Pintail.

*Male.*—Entire head, face, chin and throat umber brown, the feathers on the crown slightly darker and with a ferruginous tinge; back of the neck dark brown, nearly black; lower neck, breast and abdomen white; a white line running up on each side of the neck to the occiput; back, sides of the breast and flanks marked with transverse undulations of black and white; upper tail coverts cinereous or pale fulvous brown; under tail coverts deep velvet black; tail with the central feathers black, much elongated, and glossed with greenish, the others dusky brown and margined with white; primaries dusky greyish brown, the shafts much paler; secondaries dusky brown on their inner webs, their outer webs forming the speculum, dark greenish bronze, edged with black and tipped broadly white; upper part of the speculum edged with pale ferruginous; tips of the greater coverts, like the lesser and median coverts, are dusky brown; scapulars black, edged with yellowish; tertiaries long and pointed, deep black and edged with whitish; bill black, with a bluish tinge on the sides of the upper mandible; legs and feet slaty or blackish grey; irides dark brown.

*Length.*—22 to 29 inches; wing 10·3 to 11·75; tail 7·5 to 8; bill 2 to 2·45.

*Females.*—Smaller. *Length.*—20 to 22·5; wing 9·3 to 10.

*Female.*—Forehead and crown, also back of the head, nape and neck dark brown, the feathers with fulvous edgings; sides of the face, chin, throat and foreneck fulvous with brown spots and streaks, which become longer and darker on the lower neck; breast and the lower parts fulvous with obscure crescentic brownish markings on the breast, flanks and sides of the rump and large spots on the lower abdomen; back and scapulars dark brown, with lunate or crescentic markings of white and pale buff about the middle of each feather, and edged with whitish; greater and lesser wing coverts dusky brown, with margins and tips of white; primaries a shade lighter; speculum brownish bronze, unglossed, the tips of the feathers white; tertiaries dusky brown, margined with white; tail long, pointed, dark brown, with imperfect bars and streaks of white or yellowish white; under tail coverts fulvous white, with brown spots.

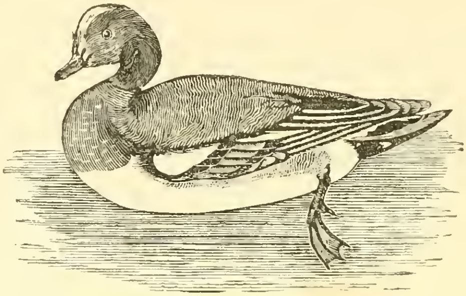
*Hab.*—Sind, Beloochistan, Persia, Afghanistan, Punjab, N.-W. and Central Provinces, Oudh, Bengal, Kutch, Concan, Deccan, Guzerat, Central and Southern India and Ceylon. Hume says—"There is no district in the Empire, from Ceylon to Kashmir, and from Kashmir to Sadya, Munipoor and Moulmein, where the Pintail does not occur in greater or less abundance except in south Tenasserim."

The Pintail affects the large broads or dhunds and lakes, and is seldom seen except in large parties. It is held in much esteem for the table, and for this purpose is netted in great numbers with the Gadwall and other water birds. On the Munchur Lake the fowlers net from 100 to 200 daily, and a sportsman in suitable localities could obtain two or three dozens at least as a

good day's sport, besides other game. Hume, like myself, thinks that on the whole, next to the Mallard, the Pintail is the best duck for the table in India, the Gadwall ranking third.

Gen. **Mareca**, *Steph.*, *Gray, Gen. B.* iii. p. 614.

Bill uniform in width; laminæ prominent; first and second quills of wing longest; tail short, cuneate; hind toe small.



Mareca penelope. The Wigeon.

**230. Mareca penelope** (*Linn.*), *Bodd.*, *Tab. Pl. Enl.* p. 825; *Gould, B. Eur.* pl. 359; *Jerd.*, *B. Ind.* iii. p. 804; *Dresser, B. Eur.* vi. p. 541, pl.; *Hume, Str. F.* i. p. 61; iv. p. 30; vii. p. 494; *Hume and Marsh.*, *Game Birds* iii. p. 198, pl.; *Hume, Str. F.* viii. p. 115; x. p. 245 (note); *Murray, Vert. Zool., Sind*, p. 299; *Oates, B. Br. Burm.* p. 278; *Murray, Avif. Brit. Ind.* ii. p. 691, No. 1394. Anas penelope, *Linn.*, *Syst. Nat.* i. p. 202; *Blyth, B. Burm.* p. 166.—The WIGEON.

*Male.*—Forehead and crown creamy yellow, remainder of head and neck rich chestnut; cheeks speckled with black, also a speckled band down the middle of the throat in some; nape narrowly barred with black and pale reddish white; chin and throat black; lower neck and breast vinaceous red, lightest in front, darkest on the sides; abdomen white, the flanks with transverse undulating lines of black and white; under tail coverts black, with a greenish gloss; tail blackish grey; back minutely barred with transverse undulating lines of black and white; scapulars black, edged with white; wing coverts white, the greater ones with velvet black tips; speculum glossy green, bounded above and below with black; bill plumbeous, the base black; legs and feet plumebous or brown; irides red brown.

*Length.*—19 to 19·5; wing 10 to 10·5; tail 4 to 4·5; bill 1·7 to 1·82. *Females* are smaller; *length* 17·5 to 19; wing 9·3 to 8·0 inches; tail 3·5 to 5. In colouring the female has the head and neck fulvous brown, speckled with dusky; upper parts dusky or deep brown, the feathers with reddish edges; speculum without the green gloss; feathers of the flanks rufous brown, tipped with ashy.

*Hab.*—Sind, Beloochistan, Persia, Afghanistan, Punjab, N.-W. and Central Provinces, Oudh, Bengal and throughout Western and Central India, rare in Southern India and Burmah, and not yet recorded from Ceylon. In Kattiawar, Rajputana, the Deccan and Concan it is not uncommon during the winter months. It is considered excellent eating for the first two months after arrival, but after this the flesh is said to become of a muddy flavour and unpalatable.

Gen. **Querquedula**, *Steph.*, *Gray*, *Gen. B.* iii. p. 616.

Bill of uniform width, as long as the head, and slightly raised at the base; nail horny, hooked and narrow; lamellæ not apparent; wings long, second quill longest; secondaries long and pointed; tail wedge-shaped.

**231. Querquedula crecca** (*Linn.*), *Bod. Tab. P. E.* p. 946; *Gould, B. Eur.* pl. 364; *Jerd., B. Ind.* iii. p. 806; *Dresser, B. Eur.* vi. p. 507, pl.; *Murray, Hdbk., Zool., &c., Sind*, p. 235; *Oates, B. Br. Burm.* ii. p. 285; *Murray, Avif. Brit. Ind.* ii. p. 692, No. 1395. Anas crecca, *Linn., Syst. Nat.* i. p. 204; *Legge, B. Ceylon*, p. 1083; *Hume, Game Birds Ind.* iii. p. 206. (*Kardo*, Sind; *Moorghabi*, Hind.)—The COMMON TEAL.

Forehead, crown, face, cheeks, throat and upper neck in front rich chestnut brown; chin black; a narrow dark line round the base of the bill, followed by a white or buffy one on the side, which meets a similar coloured superciliary stripe, and another under the eye; behind the eye, between the hind superciliary and lower eye-streak is a broad glossy green, or dark green patch, which meets on the back of the neck; breast rufescent or white, tinged with reddish and spotted with black; upper abdomen white; lower abdomen in some minutely barred with brownish; flanks barred with brown or blackish brown; upper back and scapulars marked with undulating white and black transverse bars; lower back dark brown, with faint traces only of paler transverse bars; tail hair brown or dusky brown, the feathers edged with white; under tail coverts black, the feathers on the sides creamy yellow; primaries dusky brown, edged on their outer webs and tipped darker; first six secondaries velvet black on their outer webs; next four or five forming the speculum glossy green, and followed by the black outer web of the first tertial; lesser and median coverts dusky or greenish brown; greater coverts the same and tipped with white or yellowish white, forming a border to the speculum above; bill black, or brownish black; irides brown; legs and feet greyish or plumbeous.

*Length.*—14·5 to 15·75 inches; wing 7 to 8; tail 2·9 to 3·5.

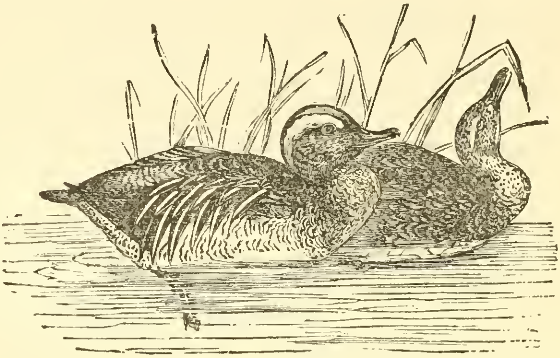
The female has the head, neck and upper part dusky brown; the feathers edged with white or fulvous white on the head and neck and lunated on the back; speculum as in the male, but slightly duller; chin and throat white, with black spots; breast and flanks white and spotted with dark brown; abdomen white; under tail coverts with brown streaks.

*Length.*—13·5 to 14·7 inches; with a wing of 6·5 to 7·5.

*Hab.*—Sind, Beloochistan, Persia, Afghanistan, Punjab, N. W and Central Provinces, Rajputana, Kutch and throughout India and Burmah.

Abundant wherever it occurs, frequenting tanks, rivers, ponds and jheels, &c.

232. **Querquedula circia** (*Linn.*), *Jerd.*, *B. Ind.* iii. p. 807; *Dresser*, *B. Eur.* vi. p. 513, pl.; *Hume*, *Nests and Eggs*, p. 644; *Scully*, *Str. F.* iv. p. 201; *Hume and Marsh.*, *Game Birds* iii. p. 215, pl.; *Bingham*, *Str. F.* ix. p. 198; *Murray*, *Vert. Zool.*, *Sind*, p. 301; *Oates*, *B. Br. Burm.* ii. p. 286; *Murray*, *Avif. Brit. Ind.* ii. p. 693, No. 1396. Anas circia, *Linn.*, *Syst. Nat.* i. p. 204; *Blyth*, *B. Burm.*, p. 166; *Legge*, *B. Ceylon*, p. 1080.—The Garganey Teal.



Querquedula circia. The Garganey or Blue-winged Teal.

*Male.*—Forehead purplish brown, finely streaked with white; crown of the head, occiput, nape and a line half way down the back of the neck dark umber or blackish brown, bounded on each side by a white superciliary streak, which extends to the sides of the neck; face, sides of the neck, cheeks, throat and neck chestnut brown, the feathers with white mesial streaks; chin black; breast and upper abdomen yellowish brown, tinged in some specimens with ferruginous, and with broad crescentic dark brown markings; lower abdomen white or yellowish white, with, in some specimens, transverse, dusky striæ behind; flanks with transverse undulations of black and white; axillaries white with black bases; back brownish black, the feathers edged with yellowish brown; primaries dark brown on their outer webs and tips, pale wood brown on their inner webs, in some specimens narrowly edged with whitish; wing spot on outer web of secondaries dull green, slightly glossed and tipped with white, the white tips forming the second bar across the wing; greater coverts ashy grey or bluish ashy, broadly tipped with white; lesser and median coverts ashy grey, or bluish ashy; scapulars long and lanceolate, black, with a mesial white shaft, and narrowly edged greyish white or white; tertiaries dusky brown, edged with white on their outer webs; rump and upper tail coverts dark brown, with bars of yellowish white; tail dark brown, the feathers edged

with yellowish or fulvous white; under tail coverts yellowish white with black spots; bill black above, brownish on the lower mandible; irides brown; legs and feet greenish grey or plumbeous.

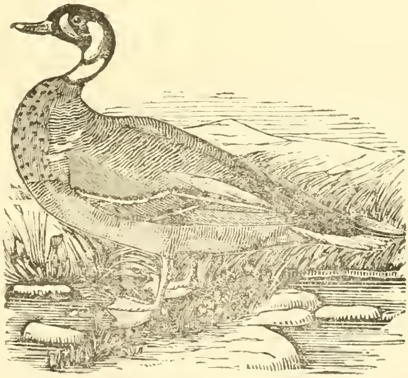
*Length.*—15·5 to 16·5 inches; wing 7·2 to 8; tail 3·2 to 3·5; bill 1·75 to 1·85.

The *female* has the chin and throat white; head on the crown brown with spots and streaks of a darker shade; back of neck brown, the feathers edged with white; eye-streak faint; speculum dull and indistinct, bordered above and below with white; breasts and abdomen greyish white, spotted with brown.

*Length.*—14·5 to 15 inches, with a wing of from 7 to 7·5.

*Hab.*—The same as *Q. crecca.*

Not found in as great numbers as *Q. crecca*, affects the same situations, and is considered excellent for the table. It is chiefly a nocturnal feeder, concealing itself in the jheels and dhunds, among the high grass, during the day; when disturbed it usually returns to the same spot. Hume says "that at nights they come in some parts of the country in such crowds into paddy fields as to destroy acres of crop at one visit; their food, like *Q. crecca*, is chiefly vegetable, as tender shoots and leaves of water plants, seeds, bulbs, &c, but on the sea coasts, especially the Sind and Mekran Coast, where they are frequently found in some numbers, crustacea, slugs, fry of fish and algæ form their diet."



Querquedula formosa. The Clucking Teal.

**233. Querquedula formosa**, *Georgi*, *Act. Stockl.* 1779, t. i.: *Schl. J.* t. 82; *Murray*, *Avif. Brit. Ind.* ii. p. 694, No. 1397. Querquedula glocitans (*Pall.*), *Jerd.*, *B. Ind.* iii. p. 808; *Hume*, *Game Birds Ind.* iii. p. 225.—The CLUCKING TEAL.

"*Male.*—Forehead, top of head and occiput rich purple brown, bounded by a narrow white line from the eye; face, cheeks and side of neck fawn

colour ; a black streak from below the eye meeting a black patch on the throat; nape and hind neck glossy green, ending in a black stripe down the back of the neck, separated from the fawn colour of the sides of the neck by a narrow white line ; upper plumage finely marbled grey, edged with rufous on the back ; upper wing coverts hair brown, the median coverts the same, with an edging of rufous, forming the anterior margin of the speculum, which is glossy green, ending in velvet black and bordered posteriorly with silvery white ; primaries brown ; scapulars lengthened, deep black in the centre, white on their upper side, and rufous externally ; upper tail coverts brown, white on either side ; tail of 16 feathers, dark brown ; beneath the throat black ; neck and breast vinaceous purple, paling below with black spots ; abdomen white ; flanks mottled grey ; under tail coverts black ; bill dusky ; legs dusky.

"*Length.*—15·5 inches ; wing 8·5 ; tail 3 ; bill at front 1·5."—(*Jerd., B. Ind.*)

The *female* (of which the Kurrachee Museum has a specimen) wants the rich markings on the head and face, which are mottled grey ; there is a distinct white superciliary streak and a brown streak behind the eye, also a patch of white above the angle of the upper mandible ; chin and throat white ; cheeks and sides of the neck white, the feathers with mesial linear streaks ; breast rufescent, spotted with dark brown ; belly white ; lower abdomen and under tail coverts white, with linear brown spots ; back dark brown, the feathers edged with rufous brown ; flanks dusky rufescent brown, some of the feathers with whitish edgings ; bill 1·62 × 0·62 at its widest part ; tarsus 1 6.

*Hab.*—Sind, N.-W. Provinces at Delhi (*Hume*), Oudh and Bengal.

According to Mr. Hume, this is a rare straggler within the limits of India. Blyth obtained a single specimen (a male) in the Calcutta Bazaar in 1844. Mr. James, C.S., who was for some time in Sind, had a water-colour drawing of the head of a Teal, which Mr. Hume regards as the male of this species, and, besides a female in the Kurrachee Museum, a male was obtained by Mr. Chill at Delhi in 1879.

**234. Querquedula falcata,** *Georgi. Act. Stockl.*, 1779, t. 1 ; *Hume, Str. F.* vii. p. 494 ; *id., Game Birds* iii. p. 231 ; *Murray, Avif. Brit. Ind.* ii. p. 695, No. 1398. Anas javana, *Bodd., Pl. Enl.* p. 930.—The Bronze Capped Teal.

A frontal spot ending in a point on the culmen, about 0·4 long and 0·3 wide, pure white. The lores, forehead, crown and lower portion of cheeks a rich ruddy purple or chocolate bronze ; the rest of the cheeks, sides of the head, and occiput emerald green in most lights, in a few ruddy, or even rosy bronze ; the feathers of the hinder crown, occiput and nape are lengthened so as to form a considerable mane-like crest ; the chin and entire throat snow white, then a black ring all round the neck, with dark green or greenish

blue reflections ; the white of the throat runs into a little point into this ring and half divides it ; then a white ring ; then the front and sides of the neck, breast and abdomen white, each feather with a broad subterminal black bar following the curve of the end of the feather ; those of the neck with these bars very perfect and strongly marked, those of the breast and upper three-fourths of the abdomen with only a single bar, more or less imperfect ; back of the neck (below the white ring), interscapulary region, smaller scapulars, sides of the breast, sides, flanks, lower portion of abdomen and feathers about vent closely barred, in some places almost vermiculated, black, or dusky, and white or greyish white in varying degrees of fineness and intensity ; entire wings and larger scapulars dove or grey brown, darker on the quills, the outer webs of all the secondaries black, with dull metallic green lustre, their greater coverts broadly tipped white ; middle and lower back and rump dark, rather glossy hair brown ; a few of the feathers with traces of fine pale vermiculations ; shorter central upper tail coverts similar, but a paler greyer brown ; rest of the upper tail coverts jet black, with a subdued green lustre ; tail a delicate, somewhat silvery grey brown, almost completely covered by the long black upper tail coverts ; entire wing lining and axillaries pure white ; the lowest flank feathers on each side with broad, pure white, unbarred tips ; most of the lower tail coverts black, with a faint greenish lustre ; shorter lateral lower tail coverts on each side pure creamy buff. In the breeding season the tertiaries are said to be greatly elongated, sickle-shaped, and reaching to the end of the primaries ; the shaft and external edges of these feathers whitish, the outer ones being entirely velvetty black, but the inner ones less black, and finely vermiculated.

*Male.—Length,* 19·75 ; expanse 32·5 ; wing 9·5 ; tail from vent 3·2 ; tarsus 1·5 ; bill from gape 2·1 ; weight 1 lb. 6 ozs. ; irides deep brown ; bill perfectly black ; legs and feet drab, with an olive tinge.

*Adult Female.*—Head striped with purplish brown, each feather margined with fulvous ; sides of the face and neck dotted with small brown points and stripes ; throat paler, varied, with small brown markings ; general colour of the back rufous, more or less broadly and irregularly varied with brown ; lower portion of the back brown, with a few obsolete fulvous edgings, being coloured as in the male, but the sickle-shaped feathers are developed, these being represented by a few elongated and slightly curved feathers, for the most part brown, the outer webs inclining to grey at the base, the outer margins white ; upper part of the breast deep rufous, with a few purplish brown cross markings, these being thickest on the lower part of the neck and sides of the throat ; rest of the under surface of the body fulvous, covered everywhere with very indistinct brown mottlings ; sides of the body and under tail coverts rather deeper rufous, with plainer longitudinal brown stripes and irregular mottlings ; under wing coverts and axillary plumes pure white. Total length—16 inches ; culmen 1·8 ; wing 9·0 ; tail 3·4 ; tarsus, 1·2.

*Hab.*—Punjab and N.-W. Provinces. As yet only recorded from near Lucknow and Delhi, also at Sultanpoor. The specimen from the Calcutta market must have been obtained from some part of the Coast.

*Querquedula gibberifrons* is a species only as yet known from South Andamans, where it is a permanent resident. Hume has excellent figures of both male and female in his *Game Birds*. It is a very peculiarly coloured species, the whole upper and lower surface being a sort of a pale rusty ferruginous, each feather with a mesial crescentic or sub-crescentic patch of brown towards the tips, which are slightly paler rusty ferruginous than the bases; orbital ring white; cheeks and throat white; secondary greater coverts, the outer webs of a few secondaries and their tips white; rest of outer webs of secondaries velvetty black, with a brilliant green longitudinal band.

## **Sub-Family**, FULIGULINÆ, *Sw.*—Diving Ducks.

Bill elevated at base, flat and broad towards the tip; nail strong, broad and horny; tarsi short, rather compressed; toes long, webbed to the end; hind toe short; tail short and rounded.

### Gen. **Fuligula**, *Steph.; Branta, Boie.; Gray, Gen. B.* iii p. 620.

Bill nearly as long as the head, moderately wide, tip depressed; nail large; amellæ distant; wings moderate, 1st quill longest.

**235. Fuligula rufina**, *Pall., Zoogr. t.* 79; *Bodd. Tab. P. E.* 928; *Gould, B. Eur.* pl. 369; *Jerd., B. Ind.* iii. p. 811; *Str. F.* iv. p. 201; *Murray, Hdbk., Zool., &c. Sind,* p. 238; *Hume, Game Birds Ind.* iii. p. 253; *Murray, Avif. Brit. Ind.* ii. p. 697, No. 1399. (*Rattoba*, Sind; *Lall-seeree*, Punjab.)—The Red-crested Pochard.

*Male.*—Crown of the head, with an elongated crest of a silky texture and dull yellow colour; head on the sides, cheeks, chin and throat rich chestnut, with a tinge of rose red or reddish bay; nape and a line continued down the back of the neck black; lower neck, breast, sides of the breast and abdomen black, in some specimens the abdomen is a chocolate brown; flanks white; back pale brown, or yellowish brown; the scapulars with a fulvous tinge; end of the wing and a large spot on the sides of the back white; primaries brown on their outer webs and at their tips, white on their inner webs; secondaries white, with sub-terminal dark tips; tertiaries pale brown; rump and upper tail coverts nearly black; tail dark brown; bill bright vermilion; legs and feet vermilion or reddish orange; irides reddish brown.

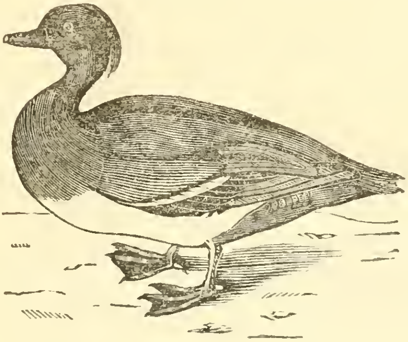
*Length.*—20·5 to 22 inches; wing 10 to 10·75; tail 3·0 to 4·0; bill 2·3 to 2·5.

*Females* are not much smaller, and average from 20 to 21 inches. Forehead and crown dark brown; the neck on the back and nape slightly paler;

crest much less developed; sides of the face and neck brownish white; speculum greyish white; breast and flanks yellowish brown, some of the feathers edged paler; shoulder of wing greyish white; tail yellowish brown; legs and feet reddish brown; back rufous or yellowish brown, some of the feathers edged paler.

*Hab.*—Sind, Beloochistan, Persia, Afghanistan, Punjab, N.-W. Provinces, Bengal, Guzerat, Kutch, Rajputana, the Deccan and throughout India generally, except in Southern India and Ceylon.

It is said to breed in parts of Persia. Occurs everywhere in large numbers during winter from the latter end of October to about the middle of April; a few, however, remain beyond the 10th of April. They are not very shy in their wild state, except in well-shot districts, and usually large bags may be made of this duck in a single day; they swim well and dive equally well, remaining a long while under water. Large lakes and rivers, and situations where there is much deep water, are the natural resorts of this duck.



Fuligula cristata. The Tufted Pochard.

**236. Fuligula cristata** (*Linn.*), *Bodd. Tab. P. E.* 1101; *Gould, B. Eur.* pl. 370; *Jerd., B. Ind.* iii. p. 815, No. 971; *Murray, Hdbk., Zool., &c., Sind*, p. 338; *Hume, Game Birds, Ind.* iii. p. 277; *Murray, Avif. Brit. Ind.* ii. p. 698, No. 1400. (*Turando*, Sind; *Abluk*, Punjab.)—The Tufted Pochard.

Head, neck, long pendent crest and nape glossy black, with purple and green reflections; on the chin a white triangular spot; throat and breast black; back dusky olive brown, or black brown, tinged with violet; under parts white; vent and under tail coverts black; greater wing coverts white, the tips broadly black; lesser wing coverts like the back; tertials glossy green; bill plumbeous; irides golden yellow; legs and feet dusky.

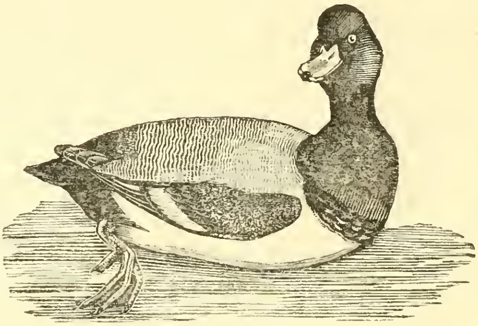
*Length.*—16 to 17 inches; wing 7·5 to 8·5; tail 2·5 to 3·0; bill 1·8 to 2·0.

*Female.—Length*—15 to 16 inches, with a wing of 7·5 to 8.

The female is dull rufous brown above, with paler edges to the feathers, the crest is less developed and deep rufous brown in colour; feathers about the bill pale yellowish white; breast on the centre yellowish or fulvous white, tinged with greenish; under parts white, with faint dusky bars of brown; speculum white; the under tail coverts white, with a few spots of pale brown.

*Hab.*—Sind, Beloochistan, Persia, Afghanistan, Punjab, N.-W. and Central Provinces, Oudh, Bengal, Rajputana, Kutch, Guzerat, Concan, Deccan, Central and Southern India.

This duck frequents chiefly open tanks, jheels and small dhunds overgrown with weeds. It feeds chiefly on small molluscs and insects. In the stomachs of a few obtained by me at Sehwan were species of *Nepidæ*, a species of *Ranatra* being the most common. They dive and swim well, and remain for some time under water in search of minute molluscs, roots and seeds. They are said to be good eating, but after January the flesh has a peculiar flavour, which renders it unpalatable.



Fuligula marila. The Scaup Pochard.

**237. Fuligula marila** (*Linn.*), *Bodd. Tab. P. E.* 1002; *Gould, B. Eur.* pl. 371; *Jerd., B. Ind.* iii. p. 814, No. 970; *Murray, Hdbk., Zool., &c., Sind*, p. 239; *id., Vert. Zool., Sind*, p. 305; *Hume, Game Birds Ind.* iii. p. 271; *Murray, Avif. Brit. Ind.* ii. p. 699, No. 1401.—The Scaup Pochard.

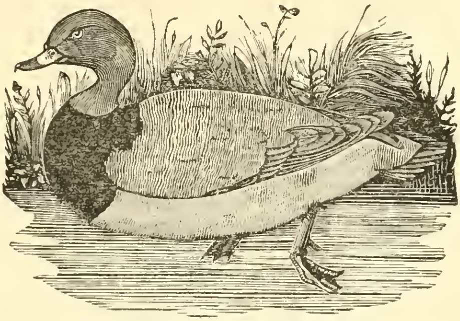
"*Male.*—Head and neck black, glossed with green; top of the back and scapulars whitish, with zigzag black lines; lower back and upper tail coverts black; tail brown; wing coverts black, marbled with ashy; speculum white; quills brown; lower neck and breast deep black; abdomen and sides pure white, with brown zigzag markings on the lower portion; under tail coverts black; bill clear bluish above, dusky below, the tip black; irides brilliant yellow; legs bluish ashy; webs blackish." (*Jerdon.*)

*Length.*—19 to 20 inches; wing 9 inches; tail 2·5; bill at front nearly 2; tarsus 1·5. The measurements of a female given by Mr. Hume are—*Length*, 18 inches, expanse 28, wing 8·75, tail 2·5, tarsus 1·33, bill along ridge 1·83.

A specimen of a female in the Kurrachee Museum measures—*Length*, 17·75 inches, wing 7·5, tail 2·8, bill at front 1·62, greatest width 0·81 The forehead, crown and nape are chocolate brown, with a faint gloss; a band of white (loreal) at the base of the bill 0·43 wide, tinged with rufous; chin rufescent white; throat slightly paler than the head; lower neck and breast pale brown, the feathers edged with pale rufescent or earthy brown; abdomen satin white; sides of the vent brownish, with a few white spots; back, scapulars, tertials, wing coverts and rump and upper tail coverts dark brown, with a slight gloss; the feathers of the upper back very narrowly edged paler; primaries dark brown on their outer webs and tips, earthy brown on their inner webs; secondaries white, broadly tipped with dark brown and narrowly edged the same on their outer webs; tail dark brown; irides yellow.

*Hab.*—Sind, Cashmere and Nepaul.

It was not till I took up the Scaups for examination in connection with this work, that I detected this species; like Mr. Hume I had it ticketed as *nyroca*. Mr. Hume's plate of the female of this species, and his description of the specimens in his museum puts its occurrence in Sind beyond doubt. The female specimen described was obtained in 1879 at the "*One Tree Tank*," about six miles north of Kurrachee, on the road to Muggur Peer. I believe now that I had the male also, but just at present it is nowhere to be found.



Fuligula ferina. The Pochard.

**238. Fuligula ferina** (*Linn.*), *Bodd. Tab. P. E.* 803; *Gould, B. Eur.* pl. 367. Athya ferina, *Jerd.*, *B. Ind.* iii. p. 812; *Murray, Hdbk., Zool., &c., Sind*, p. 239; *id., Vert. Zool., Sind*, p. 307; *Hume, Game Birds Ind.* iii. p. 249; *Murray, Avif. Brit. Ind.* ii. p. 700, No. 1402.—The POCHARD, DUN-BIRD OR GREAT-HEADED WIGEON.

Head and neck rich or very deep chestnut, glossed with purple in some lights; breast black; back, scapulars and wing coverts marked with undulating transverse striæ of black and white; rump, upper tail coverts and vent black; rest of under parts from below the breast covered with delicate zigzag transverse striæ as on the back; primaries dusky brown, with dusky tips; secon-

daries leaden or bluish grey, tinged with brown, and slightly tipped with dull white ; tail dark brownish ash.

The female has the head, neck and nape chestnut or reddish brown; the breast of deeper chestnut ; the wing coverts ashy; upper parts as in the male, but the lines less distinct ; throat and forepart of the neck reddish white; abdomen ashy or greyish white ; bill dark plumbeous; irides orange yellow ; legs and feet slaty grey or plumbeous.

*Length.*—18·0 to 18·5 inches ; wing 8·0 to 8·5 ; tail 2·35 to 3·0 ; bill 2·15 to 2·25.

*Hab.*—Sind, Beloochistan, Persia, Afghanistan, Punjab, N.-W. and Central Provinces, Oudh, Rajputana, Kutch, Guzerat, Kattiawar, Central India, Nothern parts of Southern India, and the Deccan. In the Concan it occurs but only as a straggler; it is not recorded from Ceylon, nor from Nepaul.

The Pochard makes it appearance in Sind about the end of October, and in the Punjab during November. It is usually found in large flocks, affecting the sea as well as inland creeks and fresh waters ; its chief food is molluscs, seeds, flower buds of aquatic plants and algæ also when on the sea, probably such algæ as are detached and found drifting in fresh waters. The Pochards affect deep weedy jheels, keeping well under cover during the day, and feeding chiefly by night; they fly with greater rapidity than the Mallards, and unless their haunts have not been shot over, they are very wary and difficult to approach.

**239. Fuligula nyroca** (*Gould*), *Bodd. Tab. P. E.* 1000; *Gould, B. Eur.* pl. 367 ; *Naum. Vogt.* t. 309; *Jerd., B. Ind.* iii. p. 813 ; *Murray, Hdbk., Zool. &c., Sind*, p. 239; *id., Vert. Zool., Sind*, p. 307 ; *Hume, Game Birds Ind.* iii. p. 293 ; *Murray, Avif. Brit. Ind.* ii. p. 701, No. 1403. (*Burnoo*, Sind ; *Karcheeya*, Punjab.)—The WHITE-EYED POCHARD or FERRUGINOUS DUCK.

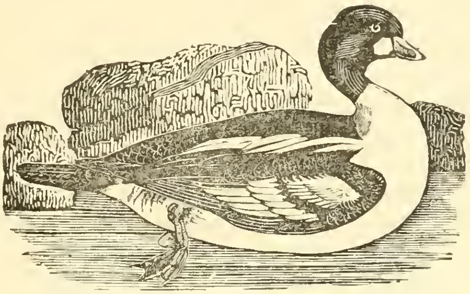
Forehead, crown, nape, sides of the face, throat and upper neck all round deep ferruginous ; breast and sides of the breast the same ; chin with a triangular patch of white ; a black collar on the lower part of the neck, which behind runs into the purplish glossed dark brown of the back ; scapulars and tertials dark brown, also the rump and upper tail coverts ; abdomen pure white ; flanks ferruginous ; lower abdomen and vent ferruginous brown, with white specklings ; lower tail coverts white ; tail dusky brown ; lesser, median and greater wing coverts dusky brown ; secondaries white, broadly tipped with dark brown ; end of the wing white, also the bases of the inner primaries and their inner webs ; outer webs dusky blackish brown ; axillaries white ; bill bluish ; irides white.

*Length.*—15·5 to 16·0 inches ; wing 7·5 to 7·75 ; tail 2·0 ; bill at front 1·9 to 2·0.

The female has the head and neck brown, the feathers edged with ferruginous; chin white, but less extended; breast brown, the feathers margined with pale chestnut brown; abdomen dull white; edge of the wing white; secondaries white, tipped with black.

*Length.*—14 to 15 inches; wing 7·72.

*Hab.*—Sind, Beloochistan, Persia, Afganistan and throughout India, except South India and Ceylon. Occurs in Nepaul, Gilgit and Eastern and Western Turkistan, in which latter it breeds. "In the lakes of Cashmere," Hume says, "they breed most abundantly, and that boat-loads of their eggs are brought to market at Srinuggar." The White Eye affects chiefly jheels with thick cover, where they sport about in the early morning, afternoon and at night, retiring during the middle of day. It is not sought for by sportsmen, being very indifferent eating at the best of times.



Clangula glaucion. The Golden Eye.

**240. Clangula glaucion** (*Linn.*), *Bodd. P. E.* 802; *Gould, B. Eur.* pl. 329; *Murray, Hdbk., Zool., &c., Sind,* p. 238; *id., Vert. Zool., Sind,* p. 296; *Hume, Game Birds,* iii. p. 285; *Murray, Avif. Brit. Ind.* ii. p. 702, No. 1404.—The Golden Eye or Garrot.

Head and upper part of the neck glossy deep green when seen in a light reflected at a small angle, otherwise purple; throat brownish black; between the lateral basal sinus of the upper mandible and the cheek is an ovate patch of white, ten-twelfths across in its greatest diameter; the lower neck all round, the breast, forepart of the abdomen, sides, and lower tail coverts white; but the axillary feathers and lower wing coverts are blackish brown, and the edges of the posterior elongated feathers on the sides black; the back and the inner and posterior scapulars are black; the outer scapulars white with the margins black; the tail is deep brown, tinged with grey; the sides of the rump and tibiæ dusky-grey, and the feathers on the hind part of the abdomen dusky at the base; wing brownish black, with a large patch of white, which includes many of the small coverts, several of the secondary coverts, and eight of the secondary quills; these white secondary coverts have their basal half black, but that colour is not apparent when the feathers are laid down.

"*Male.*—The bill is black; the iris yellow; the feet orange yellow with the webs dusky; the claws brownish black.

"*Length.*—To end of tail 19 inches; extent of wings 32; wing from flexure 9; tail 4; bill along the edge 1·42; tarsus 1·42.

"*Female.*—The female is much smaller, and has the bill less stout; the feathers of the head less elongated, and less glossy, as are the scapulars and the feathers of the sides; the bill is light brown, yellowish on the ridge towards the end, with the upper unguis dusky; the lower yellowish brown; the tarsi and toes are of a dingy yellowish brown; the inter-digital membranes dusky; the claws brown; the head and upper neck are umber brown; the lower neck all round dull ash grey, the feathers terminally edged with paler; the lower parts are white, but the sides of the body and rump with part of the abdomen, are grey; the axillary and lower wing covert brownish grey; the back and scapulars are deep ash grey, but on the hind part of back that colour shades into black; the tail dark brown, tinged with grey; the smaller wing coverts are deep grey, many of them tipped with pale grey; the primaries, their coverts, four outer secondaries, and five inner, with their coverts, brownish black; the seven other secondaries pure white, as are their coverts, unless at the base.

"*Length.*—To end of tail 16 inches; expanse 28; wing 8·25; tail 3·25; bill along the ridge 1·25; tarsus 1·25."—(*MacGillivray, Br. B. ex Str. F.* vii. p. 441.)

*Hab.*—Sind, Lucknow (*Bonavia*), North Afghanistan.

This species has not to my knowledge been obtained in Sind during the last thirteen years. "Sir A. Burnes obtained a specimen on the Indus, which is figured among his drawings in the possession of the Asiatic Society."

### Gen. Erismatura.

Tail of 18, stiff feathers, bare at the tips, and the webs much disunited.

**241. Erismatura leucocephala** (*Scop.*), *Hume, Game Birds Ind.* iii. pp. 290, 436; *Murray, Avif. Brit. Ind.* ii. p. 703, No. 1405.—The Stiff-tailed White-faced Duck.

Crown black; forehead, sides of the head, including the space above the eye, chin and nape pure white; below this white the neck is black with a few buffy brown dots on the forepart; lower neck to the forepart of the back, except in the centre, chestnut red, which extends to the foreneck and upper breast, where it is delicately marked with buffy white; back and scapulars ochreous or reddish buff; rump darker, brownish or finely vermiculated with blackish; lower rump and upper tail coverts chestnut red; quills greyish black, the secondaries externally and the larger wing coverts greyish buff, vermiculated with blackish grey; lesser coverts dull ashy, but slightly vermiculated; tail long and stiff and blackish in colour, under parts buffy white, obscurely

marked with reddish brown; flanks dull chestnut brown, tinged with warm buff and vermiculated with darker brown; bill much swollen at the base, pale ultramarine blue in colour; irides dark brown; legs dull blackish plumbeous.

*Length.*—17·5 inches; wing 6·3; tail 4·3; tarsus 1·35; culmen 1·9; gape 1·82.

The adult female differs from the male in wanting the clear white on the head and in being much richer in plumage; crown and nape blackish brown with a chestnut tinge; sides of the head similarly coloured but marked with white; a streak of white passes below the eye nearly to the nape; and the chin and upper throat are white slightly dotted with blackish brown. General colour of the upper parts darker than in the male, being deep chestnut red; under parts as in the male. Bill dull plumbeous; irides dark brown; legs plumbeous black.

## **Family**, MERGIDÆ.

Bill straight, much compressed, narrow, convex towards the tip; edges of the mandibles strongly toothed; nostrils median, longitudinal; front toes well webbed, hind toe lobed; tarsus short; wings pointed; tail short, wedge-shaped; head sub-crested.

### **Mergus**, *Linn.*

Bill slender, tip hooked; first and second quills longest.

**242. Mergus serrator** (*Linn.*), *P. E.* 207; *Naum. Vogt.* t. 325; *Gould*, *B. Eur.* pl. 385; *Str. F.* ix. p. 268; *Hume*, *Game Birds*, iii. p. 305; *Murray*, *Vert. Zool.*, *Sind*, p. 308; *id.*, *Avif. Brit. Ind.* ii. p. 704, No. 1406.—The Red-breasted Merganser.

*Adult Male.*—The whole head, chin, throat and the neck all round, for about one inch black, glossed with metallic green on the sides of the head and a bluer sheen elsewhere; along the middle of the crown and occiput runs a comparatively narrow line of excessively narrow, more or less disintegrated-webbed, elongate feathers, of which the longest are over three inches in length, forming a conspicuous crest; the rest of the neck all round, to just the base, pure white, with a conspicuous narrow black line down the centre of its hinder aspect; at the base of the neck a light brownish rufous, or pale brownish chestnut band, extends all round, narrower behind and broadening into a crop-patch. This band is streaked longitudinally with blackish brown. The interscapulary region and upper back, the extreme sides of the breast and scapulars velvet black; outside the scapulars and between these and the wing there is a conspicuous patch of long white feathers; the primaries and their coverts (which latter are darkest), the shoulder of the wing and lesser coverts just above the carpus blackish brown, the rest of the lesser and median coverts pure white; the secondary greater coverts black, all, except the first three, very broadly tipped with white, but leaving a portion of their black bases visible below

the white median coverts, thus forming the first black bar across the white of the wing; the secondaries are black, all, except the first three, very broadly tipped with white; tertiaries white, conspicuously margined with black, except the last three, which are black; axillaries pure white; rest of the lower parts white, with, in life, a beautiful salmon or buffy tinge which disappears in the skin; flanks white, vermiculated with greyish black; middle and lower back, rump and upper tail coverts white, with very delicate and close vermiculations of dull black, producing a grey effect; tail dull brown; lower wing coverts white.

The *female* has the entire crown, occiput and crest brown with more or less of a dull rufous or chestnut tinge, and rather ashy towards the forehead; sides of the head and neck all round pale dull brownish chestnut; chin white; throat albescent; breast and entire lower parts white or pinkish white in life, only at the base of the throat and crop the grey brown bases of the feathers show through to a certain extent like hidden bars; interscapulary region, mantle, lower back, rump and upper tail coverts brown, most of the feathers with paler margins; quills dusky black; secondaries and their greater coverts black, all, but the first three, broadly tipped with white; tertiaries dusky blackish, paling anteriorly, whitish towards the tip, the innermost mostly white, with a black outer margin; tail like the back.

Both sexes from the above description resemble the Goosander, but may be distinguished by their small size, and in proportion to their length much thinner bills. (*Hume, Str. F.* ix. p. 268.)

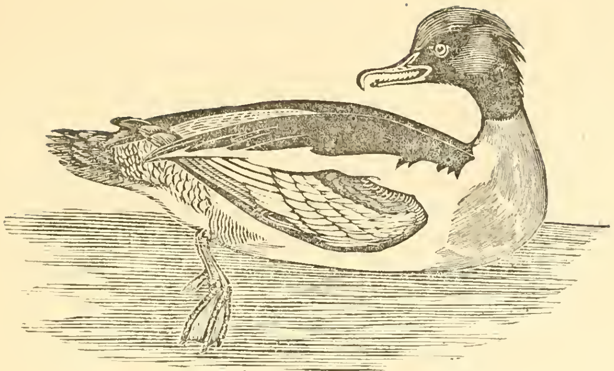
In the male the bill varies from orange red to deep vermilion, is more or less dusky on the edge, and has the nail varying from pale yellowish grey to almost black. In young females there is more dusky on the upper mandible, where the red is often only a lateral band.

*Length.—Males,* 24·0 to 26·0 inches; expanse 29·0 to 32·5; wing 9·0 to 10·0; tail from insertion of feathers 3·1 to 4·2; tarsus 1·8 to 2·05; bill at front along culmen 2·4 to 2·5.

*Length.—Females,* 22·0 to 23·5; expanse 28·0 to 31·0; wing 8·5 to 9·3; tail 2·7 to 3·6; tarsus 1·66 to 1·83; bill at front 2·1 to 2·3. (*Str. F.* ix. p. 268.)

In a second specimen (the first obtained by Capt. Bishop at Manora, and sent by me to Mr. Hume) now in the Kurrachee Museum—male, the bill at front is exactly 2·0 inches, tarsus 1·6, wing 8·37, tail 3·7, length 23·2, agrees exactly with Mr. Hume's description as given above.

*Hab.*—Sind. Mr. Hume says there is no other instance of its occurrence in India. China, Mongolia, S. and S.-E. Siberia, Palestine and throughout Europe; Scotland, Shetland, Sweden and Norway are given as localities outside of India.



Mergus merganser. The Goosander.

**243. Mergus merganser** (*Linn.*), *Gould, B. Eur.* pl. 384; *Hume and Marsh., Game Birds* iii. p. 299; *Murray, Avif. Brit. Ind.* ii. p. 706, No. 1407. Mergus castor, *Jerd., B. Ind.* iii. p. 817; *Str. F.* i. p. 422; ii. pp. 336, 439; iv. pp. 202, 496; v. p. 323; vii. p. 149; *Murray, Vert. Zool., Sind,* p. 309.—The Goosander or Merganser.

Head with a short thick crest, and upper part of the neck glossy blackish green; lower neck white; breast, abdomen and under tail coverts white, tinged with orange buff; upper back and scapulars black; lower back and upper tail coverts ashy; tail ashy grey; wing coverts and outermost scapulars rich orange buff, the latter edged with black. The female and young male have the head and neck reddish brown, the upper plumage ashy, the throat white, and a white speculum on the wing. Bill blood red; black on the culmen; irides and feet red.

*Length.*—25 to 28 inches; wing 10·9 to 12; tail 4·8 to 5·9; tarsus 1·8 to 2·03; bill from gape 2·7 to 2·9. Females average 22·9 to 25 inches in length.

*Hab.*—This species, although not yet reported from Sind, will no doubt be found to occur. It is said to occur in the Punjab, N.-W. Provinces, and Bengal, and also in Ajmere, and to breed in the higher valleys of the Himalayas, and in Beloochistan and Persia. A woodcut of the species is given to aid identification.

## Mergellus.—*Selby.*

Bill shorter and wider than in *Mergus*; tip broad and much less hooked; mandible toothed.

**244. Mergellus albellus** (*Linn.*), *Bodd. P. E.* 449; *Gould, B. Eur.* pl. 387; *Jerd., B. Ind.* iii p. 818; *Str. F.* i. p. 265; iv. pp. 31, 202; *Murray, Hdbk., Zool., &c., Sind,* p. 240; *id., Vert. Zool., Sind,* p. 310 *Hume, Game Birds Ind.* iii. p. 263; *id., Avif. Brit. Ind.* ii. p. 705, No. 1408. —The Smew.

*Male.*—A black patch with green reflections from the base of the bill extending round the eye; head white, occiput with a longitudinal black patch descending down the back of the neck; chin, throat, neck, breast (except two crescentic black bands) and lower parts white; flanks and thigh coverts white, with dark zigzag transverse striæ; back black; greater wing coverts glossy black, tipped with white; lesser wing coverts partly white; primaries dusky black; secondaries glossy black, edged narrowly and tipped with white, forming two narrow bands across the wing; tertiaries leaden grey; upper tail coverts and tail greyish ash; under tail coverts white; bill light plumbeous with a bluish tinge; irides reddish brown; legs and feet plumbeous.

*Length.*—17 to 18 inches; wing 7·55 to 8·5; tail 3·37 to 3·9; bill 1·5 to 1·6.

The *female* has the head, crown, nape and hind neck reddish chestnut brown; sides of the neck white; crest short; back, upper tail coverts and tail deep ashy grey; chin and throat white; breast greyish white; abdomen white; flanks grey; wings as in the male, but the dark parts grey instead of black.

*Length.*—16 to 17 inches; wing 7·5 to 7·75; tail 3 to 3·2; bill at front 1·2 to 1·4

*Hab.*—Sind, Persia, Afghanistan, Punjab, Oudh, N.-W. Provinces, and North Guzerat. A winter visitant to India, arriving in Sind and the Punjab about the last week in October. The Smew is a shy and wary bird, taking to flight with great readiness. Smews are gregarious and are always to be found in flocks of from 10 to 20 or 30, usually in deep water on the Indus and other large rivers. Hume says—"They are difficult to approach. They keep in deep water, far away from any cover, and you can only shoot them from a boat; they can swim faster than any ordinary native boat can be propelled, and are always on the alert." They feed on fish and crustacea chiefly.

THE END.

# ADDENDA.*

**Gallus Stanleyi**, *Gray and Hardw., Ill. Ind. Zool.* 2, pl.; *Gould, B. Asia, Pt.* vi. pl.; *Hume and Marsh., Game Birds,* i. p. 323, pl.; *Legge, Ibis,* 1875, p. 403; *id., B. Ceylon,* p. —The Ceylon Jungle Cock.

*Male.*—Back of head reddish; neck with long dark red hackles mesially streaked with black; rump feathers deep red basally, with heart-shaped terminations of deep metallic blue with purple reflections; feathers falling over the sides of the rump purplish black mesially and margined with deep red; secondaries blue-black; primaries brownish black; greater wing coverts deep reddish chestnut with reddish brown centres; under surface of the body rich glossy red with mesial deep chestnut longitudinal streaks; abdomen and under tail coverts black, also the thighs; upper tail coverts metallic blue, with green and purple reflections; central tail feathers long and curving outwards, of a black colour with deep blue reflections; rest of tail feathers brownish black. Bill brown; lower mandible pale yellow; irides buff; comb, wattles and nude skin on the facial region and head yellowish or purplish red, the comb with a large yellow spot about the middle. Legs and feet pale yellow.

*Length.*—19 to 25 inches; wing 8·5 to 9·0; tail 8 to 14 to end of central elongated feathers; tarsus 2·75 to 3·2; bill from gape 1·25 to 1·5.

The *female* is smaller, and has the head and neck brown, the upper parts of the latter with irregular black lines externally and mesially yellow; upper parts of the body yellowish brown vermiculated with black; primaries dark brown; secondaries dark buff, barred irregularly with black, with broad black lines; upper breast like the back; feathers of the under surface of the body black basally and yellowish white at the tip; tail reddish brown, mottled with black.

*Hab.*—Ceylon (Bigawantalawa District, *Armstrong*). Pundaloya and chiefly the Southern districts.

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* The inclusion of the Game Birds of Ceylon having been made by special request, the Ceylon Jungle Cock is now added.

# GENERAL INDEX.


PAGE

*Actitis glareola* ... 139
—— hypoleucos ... 138
—— ochropus ... 138
acuta, Dafila ... 188
Ægialitis cantiana ... 107
—— curonica ... 109
—— dubia ... 108
—— *fluviatilis* ... 109
—— Geoffroyi ... 106
—— Jerdoni ... 109
—— *minutus* ... 109
—— mongolica ... 107
—— *mongolus* ... 107
—— *nigrifrons* ... 107
—— *phillipensis* ... 108
—— *phillipinus* ... 109
—— *placida* ... 107
—— *pyrrhothorax* ... 107
*Ægialophilus cantianus* ... 108
ægocephala, Limosa ... 145
anea, Carpophaga ... 22
——, Columba ... 22
Æsacus recurvirostris ... 113
—— *magnirostris* ... 113
akool, Porzana ... 162
*albida, Emberiza* ... 10
albifrons, Anser ... 173
albiventris, Turnix ... 93
albocristatus, Euplocamus ... 60
——, Gallophasis ... 60
alchata, Pterocles ... 45
Alsocomus Hodgsoni ... 29
—— puniceus ... 29
Ammoperdix bonhami ... 7
Anas *acuta* ... 188
—— caryophylacea ... 184
—— *casarca* ... 178
—— *circia* ... 191
—— *coromandelicus* ... 176
—— *crecca* ... 192

PAGE

Anas *fulva* ... 178
—— *Javanica* ... 177
—— leucoptera ... 180
—— *penelope* ... 190
—— pœcilorhyncha ... 183
—— *scutulata* ... 179
—— *streperus* ... 185
Anatidæ ... 175
Andersoni, Euplocamus ... 64
Anser albifrons ... 173
—— brachyrrhynchus ... 172
—— cinereus ... 171
—— *coromandelianus* ... 176
—— *erythropus* ... 174
—— indicus ... 174
—— segetum ... 171
Anseridæ ... 171
Anthropoides virgo ... 121
antigone, Grus ... 118
Arboricola atrogularis ... 78
—— brunneipectus ... 78
—— chloropus ... 79
—— intermedia ... 79
—— rufogularis ... 80
—— torqueola ... 81
*Arborophila brunneipectus* ... 78
—— *chloropus* ... 79
—— *mandelli* ... 80
—— *rufogularis* ... 80
Ardea cinerea ... 168
—— *fusca* ... 168
—— goliath ... 166
—— insignis ... 168
—— purpurea ... 169
—— sumatrana ... 167
—— *tectirostris* ... 167
—— *typhon* ... 167
Ardeidæ ... 166
ardeola, Dromas ... 117
arenarius, Pterocles ... 43

PAGE

arenaria, Calidris ..................... 136
———, *Tringa* ..................... 136
argoondah, Perdicula ..................... 84
*Argus giganteus* ..................... 51
*argus, Phasianus* ..................... 51
Argusiana ..................... 50
*Argusa giganteus* ..................... 51
Argusianus argus ..................... 51
——— *giganteus* ..................... 51
asiatica, Perdicula ..................... 84
*assimilis, Macropygia* ..................... 31
*aswuree, Dendrocygna* ..................... 177
atra, Fulica ..................... 155
atrogularis, Arboricola ..................... 78
aureola, Emberiza ..................... 6
auritus, Sypheotides ..................... 101
avocetta, Recurvirostra ..................... 150

Bailloni, Porzana ..................... 160
———, *Rallus* ..................... 160
Bambusicola Fytchi ..................... 81
bengalensis, Galloperdix ..................... 69
———, *Perdix* ..................... 69
———, *Rhynchœa* ..................... 128
———, Sypheotides ..................... 100
bicincta, Osmotreron ..................... 18
bicolor, Carpophaga ..................... 23
———, *Columba* ..................... 23
Blewitti, Microperdix ..................... 87
*Blythi, Ceriornis* ..................... 56
bonhami, Ammoperdix ..................... 75
brachyrrhynchus, Anser ..................... 172
brunneipectus, Arboricola ..................... 78
———, *Arborophila* ..................... 78
buchanani, Emberiza ..................... 8

Caccabis chukor ..................... 74
cælestis, Gallinago ..................... 125
Calœnas nicobarica ..................... 38
Calidris arenaria ..................... 136
*calidris, Scolopax* ..................... 141
———, Totanus ..................... 141
Caloperdix *ocellata* ..................... 82
——— oculea ..................... 82
cambayensis, Perdicula ..................... 84
———, *Turtur* ..................... 33

PAGE

candidus, Himantopus ..................... 151
canescens, *Scolopax* ..................... 140
———, Totanus ..................... 140
Canningi, Rallina ..................... 159
cantiana, Ægialitis ..................... 107
———, *Ægialophilus* ..................... 108
———, *Charadrius* ..................... 108
capensis, Rhynchœa ..................... 128
Carpophaga ænea ..................... 22
——— bicolor ..................... 23
——— griseicapilla ..................... 23
——— insignis ..................... 23
——— *sylvatica* ..................... 22
CARPOPHAGINÆ ..................... 22
caryophyllacea, Anas ..................... 184
———, *Rhodonessa* ..................... 184
Casarca *leucoptera* ..................... 178
——— rutila ..................... 178
——— scutulata ..................... 178
*castanea, Pucrasia* ..................... 58
Ceriornis *Blythi* ..................... 56
——— melanocephalus ..................... 55
——— satyra ..................... 55
*ceylonensis, Perdix* ..................... 69
*ceylonica, Porzana* ..................... 158
———, *Rallina* ..................... 58
Chalcophaps indica ..................... 37
Chalcophasis Sclateri ..................... 54
Charadrius *œdicnemus* ..................... 114
——— *cantianus* ..................... 108
——— *curonicus* ..................... 108
——— *dubius* ..................... 108
——— *fluviatilis* ..................... 108
——— fulvus ..................... 104, 106
——— Geoffroyi ..................... 106
——— *longipes* ..................... 106
——— *mongolicus* ..................... 107
——— *mongolus* ..................... 107
——— *phillipinus* ..................... 108
——— pluvialis ..................... 105
——— pyrrothorax ..................... 107
——— *Scolopax* ..................... 114
——— *virginicus* ..................... 106
CHARADRINÆ ..................... 103
Chaulelasmus angustirostris ..................... 186
——— rufiventris ..................... 186
——— streperus ..................... 185

PAGE
Chettusia cinerea ........................ 112
———— *flavipes* ........................ 112
———— gregaria........................ 111
———— *inornata* ........................ 112
———— leucura ........................ 112
———— *villotœi* ........................ 112
chinensis, Coturnix ........................ 90
————, Excalfactoria ........................ 89
————, Francolinus ........................ 73
————, *Tetrao* ........................ 73, 90
*chinquis, Polyplectron* ........................ 51
chirurgus, Hydrophasianus........................ 153
————, *Tringa* ........................ 153
chlorigaster, Crocopus ........................ 16
chloropus, Arboricola ........................ 79
————, *Arborophila* ........................ 79
————, Gallinula ........................ 163
————, *Peloperdix* ........................ 79
————, *Tropicoperdix* ........................ 79
chukor, Caccabis ........................ 74
*cia, Emberiza* ........................ 9
cinclus, Tringa ........................ 134
cinerea, Ardea ........................ 168
————, Chettusia ........................ 112
————, *Fulica* ........................ 165
————, Grus ........................ 119
————, Terekia........................ 143
cinereus, Anser ........................ 171
————, Gallicrex........................ 165
————, *Pluvianus* ........................ 112
circia, *Anas*........................ 192
————, Querquedula ........................ 191
*Cirripidesmus Geoffroyi* ........................ 106
———— *mongolicus* ........................ 107
*Citrinella* Euspiza........................ 7
———— *fucata* ........................ 3
———— *rutila*........................ 7
———— Stewarti ........................ 9
Clangula glaucion ........................ 201
clypeata, Spatula ........................ 181
cœlestis, Gallinago ........................ 125
————Scolopax ........................ 425
Columba *Hodgsoni* ........................ 29
———— intermedia........................ 27
———— *leptogrammica* ........................ 30
———— leuconota ........................ 28
———— livia........................ 27

PAGE
Columba *meena* ........................ 33
———— risoria........................ 30
———— rupestris ........................ 28
———— striata ........................ 37
———— *tigrina* ........................ 35
———— *vernans* ........................ 18
———— *viridis* ........................ 18
Columbidæ ........................ 24
communis, Coturnix........................ 87
*cornuta, Tadorna* ........................ 180
coromandelianus, Nettapus........................ 176
coromandelica, Coturnix ........................ 89
————, Tetrao ........................ 89
coromandelicus, *Nettapus* ........................ 176
————, Cursorius ........................ 102
coromandus, Nettapus ........................ 176
*coronata, Perdix* ........................ 83
coronatus, Pterocles ........................ 40
Coturnix chinensis ........................ 90
———— communis ........................ 87
———— coromandelica ........................ 89
———— *erythrorhyncha* ........................ 86
———— *pentah* ........................ 84
Coturnicinæ ........................ 85
crassirostris, Tringa ........................ 132
*Crawfurdi, Euplocamus* ........................ 64
crecca, *Anas* ........................ 191
————, Querquedula ........................ 191
crepitans, Œdicnemus ........................ 114
cristata, *Columba* ........................ 83
————, Galerida ........................ 11
————, Rollulus ........................ 83
cristatus, Gallicrex ........................ 165
————, *Gallinula* ........................ 165
————, Pavo ........................ 49
————, Rollulus ........................ 83
————, Vanellus ........................ 110
Crocopus chlorigaster ........................ 16
———— *Hardwickii* ........................ 16
———— *Jerdoni* ........................ 16
———— phœnicopterus ........................ 16
———— viridifrons........................ 16
Crossoptilon thibetanum ........................ 53
————*drouyni* ........................ 53
cruentus, *Phasianus* ........................ 56
————, Ithaginis ........................ 56
curonica, Ægialitis ........................ 108

PAGE

curonicus, Charadrius ... 108
Cursorius coromandelicus ... 102
——— gallicus ... 102
Cuvieri, Euplocamus ... 63
———, *Lophophorus* ... 63
———, *Nycthemerus* ... 63
Cygnus olor ... 170
——— *Bewicki* ... 171
——— *musicus* ... 171

Dafila acuta ... 188
*damascensis, Tringa* ... 131
*deliciosa, Otis* ... 100
Dendrocygna *arcuata* ... 177
———*awsuree* ... 177
———fulva ... 178
———Javanica ... 177
———*major* ... 178
*Dendrotreron Hodgsoni* ... 29
*Dromas ardeola* ... 117
dubia, Ægialitis ... 108
*dubius, Charadrius* ... 108
dubius, Totanus ... 142
*Ducula griseicapilla* ... 23
Dussumieri, Hemipodius ... 92
———, Turnix ... 92

*Elphinstonei, Palumbus* ... 26
Emberiza *albida* ... 10
——— aureola ... 6
——— Buchanani ... 8
——— *cia* ... 9
——— *flavogularis* ... 6
——— fucata ... 3
——— *huttoni* ... 8
——— leucocephala ... 10
——— luteola ... 5
——— melanocephala ... 4
——— *melanops* ... 7
——— *pithyornis* ... 10
——— pusilla ... 2
——— rutila ... 7
——— schœnicla ... 2
——— schœniclus ... 2
——— spodocephala ... 7
——— stewarti ... 9

PAGE

Emberiza stracheyi ... 9
EMBERIZINÆ ... 1
Erismatura leucocephala ... 202
*Erythra phœnicura* ... 164
erythropus, Anser ... 174
erythrorhyncha, *Coturnix* ... 86
———, Microperdix ... 86
———, *Perdicula* ... 86
Euplocamus albocristatus ... 60
———Andersoni ... 64
———*Crawfurdi* ... 64
———Cuvieri ... 63
———horsfieldi ... 62
———*ignitus* ... 64
———lineatus ... 62
———leucomelanus ... 61
———melanonotus ... 61
———Vieilloti ... 64
Eupodotis Edwardsi ... 97
Eurynorhynchus griseus ... 129
——— pygmæus ... 129
euryzonoides, *Gallinula* ... 158
———, Rallina ... 158
Euspiza *fucata* ... 3
———*luteola* ... 5
———*melanocephala* ... 4
———*rutila* ... 7
———*simillima* ... 4
Eversmanni, Palumbæna ... 26
Excalfactoria chinensis ... 89
exustus, Pterocles ... 44

fasciatus, Pterocles ... 47
fasciata, Rallina ... 159
ferrugineus, Gallus ... 65
———, Tetrao ... 65
*flavipes, Chettusia* ... 112
flavogularis, Emberiza ... 4
———, *Osmotreron* ... 20
fluviatilis, *Ægialitis* ... 109
———, *Charadrius* ... 109
Francolinus *Ceylonensis* ... 69
——— chinensis ... 73
——— *nivosus* ... 68
——— *perlatus* ... 73
——— *Phayrei* ... 73

PAGE

Francolinus pictus........................ 72
———— vulgaris........................ 71
FRINGILLIDÆ ........................ 1
fucata, Emberiza ........................ 3
———, *Euspiza* ........................ 3
———, *Citrinella* ........................ 3
Fulica atra ........................ 155
——— *cinerea* ........................ 165
fulicarius, Hyperboreus ........................ 137
Fuligula cristata ........................ 197
———— ferina ........................ 199
———— marila........................ 198
———— nyroca........................ 200
———— rufina ........................ 196
fulva, Dendrocygna ........................ 178
—— , *Anas*........................ 178
fulvicollis, Columba ........................ 20
———— , Osmotreron ........................ 20
———— , Treron ........................ 20
fulvus, Charadrius ........................ 104
fusca, *Ardea* ........................ 168
—— , Porzana ........................ 161
—— , *Rallina*........................ 161
fuscus, *Rallus* ........................ 161
—— , Totanus ........................ 141
Fytchii, Bambusicola ........................ 81

Galerida cristata ........................ 11
*Gallicrex cinereus*........................ 165
———— *cristatus*........................ 165
gallicus, Cursorius ........................ 102
GALLINÆ ........................ 65
Gallinago *cœlestis* ........................ 127
———— *gallinaria* ........................ 125
———— gallinula........................ 127
———— nemoricola ........................ 123
———— scolopacina........................ 125
———— solitaria ........................ 123
———— stenura ........................ 124
*gallinago, Scolopax* ........................ 125
*gallinaria, Gallinago* ........................ 125
———— , *Scolopax*........................ 125
Gallinula *Burnesi* ........................ 164
———— chloropus ........................ 163
———— *cristata* ........................ 165
———— *euryzonoides* ........................ 158

PAGE

Gallinula poliocephala........................ 154
———— phœnicura ........................ 164
*gallinula, Gallinago* ........................ 127
————, *Scolopax* ........................ 127
Galloperdix *bicalcaratus*........................ 69
———— lunulatus ........................ 68
———— spadiceus ........................ 67
———— zeylonensis ........................ 69
*Gallophasis Vieilotti.* ........................ 64
———— *albocristatus* ........................ 60
Gallus ferrugineus ........................ 65
—— sonnerati ........................ 66
—— Stanleyi ........................(Addenda)
GEMITORES........................ 15
*Gennœus lineatus* ........................ 62
Geoffroyi, Ægialitis........................ 106
———— , *Cirrepidesmus* ........................ 106
Geopelia striata ........................ 37
*giganteus, Argus* ........................ 50
———— , *Argusa* ........................ 50
———— , *Argusiana* ........................ 50
glareola, *Actitis*........................ 139
——— , *Rhyacophila* ........................ 139
——— , Totanus ........................ 139
——— , *Tringa* ........................ 139
glaucion, Clangula ........................ 201
*glottis, Totanus* ........................ 140
goliath, Ardea ........................ 166
GOURIDÆ........................ 36
GRALLATORES ........................ 94
gregaria, Chettusia ........................ 111
*grisea, Pyrrhulauda* ........................ 1
griseicapilla, Carpophaga........................ 23
———— , *Ducula* ........................ 23
*griseus, Eurynorhynchus*........................ 129
GRUIDÆ ........................ 118
Grus antigone........................ 118
—— cinerea ........................ 119
—— leucogeranus........................ 118
gularis, Ortygornis ........................ 76
——— , *Perdix* ........................ 76
*guttatus, Pterocles*........................ 41

HÆMATOPODIDÆ ........................ 115
Hæmatopus ostralegus ........................ 117
———— osculans........................ 117

| | PAGE |
|---|---|
| *Hamiltoni, Phasianus* | 60 |
| *Hardwickii, Perdix* | 68 |
| Haughtoni, *Pseudototanus* | 142 |
| ———, Totanus | 142 |
| *Helodromas ochropus* | 139 |
| helvetica, Squatarola | 103 |
| ———, *Tringa* | 104 |
| Hemipodius Dussumieri | 92 |
| ——— maculosus | 92 |
| ——— plumbîpes | 91 |
| ——— Sykesi | 92 |
| *himalayanus, Otis* | 100 |
| Himantopus candidus | 151 |
| ——— *intermedius* | 151 |
| himantopus, Charadrius | 151 |
| hodgsoni, Alsocomus | 29 |
| ———, *Columba* | 29 |
| ———, *Dendrotreron* | 29 |
| ———, *Perdix* | 77 |
| horsfieldi, Euplocamus | 62 |
| Houbara Macqueenii | 98 |
| humilis, Turtur | 36 |
| *humilior, Turtur* | 36 |
| Hydrophasianus chirurgus | 153 |
| ——— *sinensis* | 153 |
| hyperboreus, Phalaropus | 136 |
| hypoleucos, Actitis | 138 |
| ———, *Totanus* | 138 |
| ———, *Tringoides* | 138 |
| Hypotænidia striata | 156 |
| ——— *obscurior* | 157 |
| Ibidorhynchus Struthersii | 150 |
| *ignitus, Euplocamus* | 64 |
| impeyanus, Lophophorus | 53 |
| indica, Chalcophaps | 37 |
| ———, Parra | 152 |
| indicus, Anser | 174 |
| ———, Metopodius | 152 |
| ———, Œdicnemus | 114 |
| ———, Rallus | 157 |
| inornata, Chettusia | 112 |
| inornatus, Lobivanellus | 112 |
| insignis, Carpophaga | 23 |
| ———, Ardea | 168 |
| intermedia, Arboricola | 79 |
| intermedia, *Arborophila* | 79 |
| ———, Columba | 27 |
| intermedius, Himantopus | 151 |
| interpres, Strepsilas | 115 |
| ———, *Cinclus* | 115 |
| ———, *Tringa* | 115 |
| Ithaginis cruentus | 56 |
| *Jerdoni, Crocopus* | 16 |
| ———, *Ægialitis* | 109 |
| joudera, Turnix | 91 |
| lapponica, Limosa | 146 |
| *Lathami, Satyra* | 55 |
| ———, *Phasianus* | 61 |
| leptogrammica, *Columba* | 30 |
| ———, Macropygia | 30 |
| Lerwa nivicola | 71 |
| *lerwa, Perdix* | 71 |
| leucocephala, Emberiza | 10 |
| leucogeranus, Grus | 118 |
| leucomelanus, Euplocamus | 61 |
| leuconota, Columba | 28 |
| *leucoptera, Anas* | 179 |
| ———, *Casarca* | 179 |
| leucura, Chettusia | 112 |
| Lichtensteinii, Pterocles | 46 |
| Limicola platyrhyncha | 129 |
| Limosa ægocephala | 145 |
| ——— lapponica | 146 |
| lineatus, Euplocamus | 62 |
| ———, *Gennæus* | 62 |
| ———, *Nycthemerus* | 62 |
| ———, *Phasianus* | 62 |
| *livia, Columba* | 27 |
| *Lobivanellus inornatus* | 112 |
| longipes, *Charadrius* | 106 |
| ———, Pluvialis | 105 |
| Lophophorus sclateri | 54 |
| ——— Impeyanus | 53 |
| ——— *Cuvieri* | 63 |
| lunulatus, Galloperdix | 98 |
| luteola, Emberiza | 5 |
| ——— *Euspiza* | 5 |

PAGE

Macqueenii, Houbara ................ 98
Machetes pugnax ..................... 135
macrolopha, Pucrasia . .............. 58
Macropygia assimilis ................ 31
———— leptogrammica ........ 30
———— *tusalia* ................ 30
MACROPYGIINÆ.......................... 30
*Macrorhamphus semipalmatus* ...... 144
maculatus, Turnix......................... 92
maculosa, Turnix ....................... 92
maculosus, Hemipodius .............. 92
magnirostris, Æsacus ................. 113
*major, Dendrocygna* .................... 178
malabarica, Osmotreron ............... 19
Mandelli, Arboricola..................... 30
Mareca penelope ......................... 190
MEGAPODIDÆ ............................ 52
Megapodius nicobariensis ........... 52
melanocephala, Emberiza ........... 4
———— , *Euspiza* .............. 4
melanocephalus, Ceriornis ........... 55
melanonotus, Euplocamus ........... 61
———— , Sarkidiornis ........... 175
melanops, Emberiza ..................... 7
Meleagris satyri........................... 55
Mergellus albellus........................ 205
Mergus merganser......................... 205
———— serrator ....................... 203
Metopodius Indicus ...................... 152
Microperdix Blewitti .................. 87
———— erythrorhyncha......... 86
minuta, Porzana .......................... 162
————, Tringa .......................... 130
*minutus, Ægialitis* ...................... 109
————, *Anser* ............................ 174
mongolica, Ægialitis .................. 107
*mongolicus, Charadrius* ............... 107
———— , *Cirrepidesmus* ............ 107
*mongolus, Ægialitis* .................... 107
———— , *Charadrius*.................. 107
muticus, Pavo ............................ 50
*Myristicivora tricolor* .................. 24

*neglcetus, Porphyrio*...................... 154
nemoricola, Gallinago.................... 123

PAGE

Nettapus coromandelianus ........... 176
———— *coromandelicus*............... 176
———— *coromandus* .................. 176
nicobariensis, Megapodius ........... 52
nicobarica, Calœnas ..................... 38
*nipalensis, Puerasia*...................... 58
———— , *Phasianus* .................. 55
———— , *Treron*......................... 15
nivicola, Lerwa .......................... 71
*Nycthemerus cuvieri* ................... 63
———— *lineatus* ..................... 62
Numenius arquatus ...................... 149
———— *lineatus*.......................... 149
———— phæopus ....................... 140

*obscurior, Hypotænidia* ............... 157
ocellatus, Tetrao .......................... 82
————, Turnix ......................... 91
ochropus, Actitis .......................... 138
————, *Helodromas*...................... 138
————, *Totanus* ........................ 138
*ochropus, Tringa* ........................ 138
oculea, Caloperdix......................... 82
———— , *Perdix* ........................ 82
Œdicnemus crepitans .................... 114
———— *indicus* ........................ 114
———— *Scolopax* ..................... 114
*œdicnemus, Charadrius*.................. 114
*Ocyris oinops* ............................. 3
*oinops, Ocyris* ............................. 3
*olivacea, Perdix* .......................... 77
Ophrysia superciliosa .................. 85
*Ortygometra maruetta* ................. 161
Ortygornis gularis.......................... 76
———— ponticeriana .............. 75
*osculans, Hæmatopus* .................. 117
Osmotreron bicincta...................... 18
———— *flavogularis* .............. 20
———— fulvicollis ................... 20
———— pompadoura ............... 20
———— Phayrii ..................... 19
———— malabarica ................ 19
———— vernans .................... 18
———— *viridis* ..................... 18
ostralegus, Hæmatopus ............... 117
OTITIDÆ ................................... 94

PAGE

Otis *deliciosa* ... 100
—— *himalayanus* ... 100
—— tarda ... 94
—— tetrax ... 96

PALUMBINÆ ... 24
Palumbæna Eversmanni ... 26
Palumbus pulchricollis ... 24
——— casiotis ... 25
——— Elphinstonei ... 26
——— *torringtoni* ... 26
PARRIDÆ ... 151
PARRINÆ ... 152
*Parra indica* ... 152
——— *sinensis* ... 153
*parvus, Porzana* ... 162
Pastor roseus ... 13
Pavo cristatus ... 49
—— muticus ... 50
—— *tibetanus* ... 52
PAVONINÆ ... 40
*Pelidna subarquata* ... 133
*Peloperdix chloropus* ... 79
*pentah, Coturnix* ... 84
PERDICINÆ ... 70
Perdicula asiatica ... 84
——— Argoondah ... 84
——— *cambayensis* ... 84
——— *erythrorhyncha* ... 86
Perdix *bicalcaratus* ... 69
——— *coronata* ... 83
——— *gularis* ... 76
——— *Hardwickii* ... 68
——— *Hodgsoni* ... 77
——— *lerwa* ... 71
——— *megapodiæ* ... 77
——— *olivacea* ... 77
——— *oculea* ... 82
——— *pictus* ... 72
——— *zeylonensis* ... 69
*perlatus, Francolinus* ... 73
———, *Tetrao* ... 73
personata, Podica ... 156
phæopus, Numenius ... 148
phæopus, Scolopax ... 148
PHALAROPINÆ ... 136

PAGE

Phalaropus fulicarius ... 137
——— hyperboreus ... 136
PHAPIDINÆ ... 36
PHASIANIDÆ ... 49
PHASIANINÆ ... 52
Phasianus *argus* ... 50
——— *cruentus* ... 56
——— *Gardneri* ... 57
——— *Hamiltoni* ... 60
——— *leucomelanus* ... 61
——— *lineatus* ... 62
——— nipalensis ... 55
——— roulroul ... 83
——— Wallichi ... 59
Phayrii, Osmotreron ... 19
———, *Francolinus* ... 73
*phillipensis, Ægialitis* ... 108
*phillipinus, Ægialitis* ... 109
———, *Charadrius* ... 108
*Philomachus pugnax* ... 135
phœnicopterus, Crocopus ... 16
phœnicura, Gallinula ... 164
———, *Erythra* ... 164
*pithyornis, Emberiza* ... 10
pictus, Francolinus ... 72
———, *Perdix* ... 72
*placida, Ægialitis* ... 107
platyrhyncha, Limicola ... 129
———, *Tringa* ... 129
plumbipes, Hemipodius ... 91
———, Turnix ... 91
*Pluvianus cinereus* ... 112
Podica personata ... 156
poliocephalus, *Gallinula* ... 154
———, Porphyrio ... 154
Polyplectron *chinquis* ... 51
——— thibetanum ... 51
pompadoura, Osmotreron ... 20
ponticeriana, Ortygornis ... 75
Porphyrio *neglectus* ... 154
——— poliocephalus ... 154
Porzana Bailloni ... 160
——— akool ... 162
——— *ceylonica* ... 158
——— maruetta ... 161
——— minuta ... 162
——— fusca ... 161

PAGE
Porzana *parvus* ........................ 162
——— *pygmæa* ........................ 160
*porzana*, *Rallus* ........................ 161
PRESSIROSTRES ........................ 94
Pseudoscolopax semipalmatus ...... 144
*Pseudototanus Haughtoni* ........... 140
PTEROCLIDÆ ........................ 39
Pterocles alchata ........................ 45
——— arenarius ........................ 43
——— coronatus ........................ 40
——— exustus ........................ 44
——— fasciatus ........................ 47
——— *guttatus* ........................ 41
——— Lichtensteinii ............... 46
——— senegallus ........................ 41
——— *senegalensis* ................. 41
——— *setarius* ........................ 45
Pucrasia macrolopha ................. 58
——— *castanea* ........................ 58
——— *nipalensis* ..................... 58
pugnax, Machetes ........................ 135
———, Philomachus ................. 135
———, *Tringa* ........................ 135
———, Turnix ........................ 91
pulchratus, Turtur ..................... 32
pulchricollis, Palumbus ............... 24
puniceus, Alsocomus..................... 29
purpurea, Ardea ........................ 169
pusilla, Emberiza ........................ 2
pygmæa, *Crex*........................ 160
———, *Porzana* ........................ 160
———, *Zaporna* ........................ 160
pygmæus, Eurynorhynchus............ 129
*pyrrhothorax*, *Ægialitis* ............. 107
———, *Charadrius* ........... 107

Querquedula circia ..................... 192
——— crecca ........................ 191
——— falcata........................ 194
——— formosa ..................... 193

Rallina Canningi ........................ 159
——— *ceylonica* ........................ 158
——— euryzonoides ................. 158
——— fasciata ........................ 159
Rallina *fusca* ........................ 161
RALLIDÆ ........................ 160
RALLINÆ ........................ 160
Rallus *Bailloni* ........................ 160
——— *ceylonica* ........................ 158
——— *fuscus* ........................ 161
——— indicus ........................ 157
——— *phœnicurus* ..................... 164
——— *porzana* ........................ 161
——— *striatus* ........................ 157
——— *zeylonicus* ........................ 158
RASORES ........................ 39
Recurvirostra avocetta ............... 150
recurvirostra, Æsacus ................. 113
*Rhodonessa caryophyllacea*........... 184
*Rhyacophila glareola* ................. 139
Rhynchœa *bengalensis* ............... 128
——— capensis ..................... 128
risorius, Turtur ........................ 35
———, *Columba* ........................ 35
Rollulus roulroul ........................ 83
——— *cristata* ........................ 83
roseus, Pastor ........................ 14
roulroul, Rollulus ........................ 83
———, *Phasianus* ..................... 83
ruficollis, Tringa ........................ 131
rufiventris, Chaulelasmus ........... 186
rufogularis, Arboricola ............... 80
———, *Arborophila* ............... 80
rupestris, Columba ..................... 28
*rupicolus*, *Turtur* ........................ 32
rusticola, Scolopax ..................... 122
*rusticola*, *Scolopax* ..................... 122
rutila, *Casarca* ........................ 178
———, Citrinella........................ 7
———, Emberiza........................ 7
———, *Euspiza* ........................ 7

*salina*, *Tringa* ........................ 131
*Sarkidiornis melanonota* ............... 175
Sarcidiornis *leucopterus* ............... 179
——— melanonotus ........... 175
*Satyrus Lathami* ........................ 55
Sclateri, Lophophorus ................. 54
*Sclateri*, *Chalcophasis* ................. 54
SCOLOPACIDÆ ........................ 122

PAGE

scolopacina, Gallinago ........ 125
Scolopax *arquata* ........ 149
——— *calidris* ........ 141
——— *cœlestis* ........ 125
——— *canescens* ........ 140
——— gallinago ........ 125
——— *gallinula* ........ 127
——— rusticola ........ 122
——— rusticula ........ 122
——— *stenura* ........ 124
——— *totanus* ........ 140
*scolopax, Œdicnemus* ........ 114
——— , *Charadrius* ........ 114
scutulata, *Anas* ........ 179
——— , *Casarca* ........ 179
*semipalmatus, Macrorhamphus* ........ 144
———, Pseudoscolopax ........ 144
senegallus, Pterocles ........ 41
senegalensis, Pterocles ........ 41
——— , Turtur ........ 33
*setarius, Pterocles* ........ 45
schœnicola, Emberiza ........ 2
sinensis, *Hydrophasianus* ........ 153
——— , *Parra* ........ 153
solitaria, Gallinago ........ 123
Sonnerati, Gallus ........ 66
spadiceus, Galloperdix ........ 67
Spatula clypeata ........ 181
Sphenocercus apicaudus ........ 21
——— sphenurus ........ 21
sphenurus, Sphenocercus ........ 21
*Spilopelia tigrina* ........ 35
spodocephala, Emberiza ........ 7
Squatarola helvetica ........ 103
stagnatilis, Totanus ........ 140
stenura, Gallinago ........ 124
——— , *Scolopax* ........ 124
strepera, *Anas* ........ 185
——— , Chaulelasmus ........ 185
streperus, Chaulelasmus ........ 185
Strepsilas interpres ........ 115
striata, Geopelia ........ 37
striatus, *Rallus* ........ 157
——— , Hypotænidia ........ 156
Sturnidæ ........ 12
Sturninæ ........ 12
Sturnus vulgaris ........ 13

PAGE

subminuta, Tringa ........ 131
superciliosa, Ophrysia ........ 85
subarquata, Tringa ........ 133
sumatrana, Ardea ........ 167
suratensis, Turtur ........ 34
Sykesi, Turnix ........ 92
——— , Hemipodius ........ 92
sylvatica, Carpophaga ........ 22
———, Columba ........ 22
Sypheotides auritus ........ 101
——— bengalensis ........ 100
Syrrhaptes thibetanus ........ 48

*Tadorna casarca* ........ 178
——— cornuta ........ 180
——— *vulpanser* ........ 181
taigoor, Turnix ........ 91
tarda, Otis ........ 94
Temmincki, Tringa ........ 132
Terekia cinerea ........ 143
*Tetrao chinensis* ........ 73, 90
——— coromandelica ........ 89
——— *ferrugineus* ........ 65
——— *ocellatus* ........ 82
——— *perlatus* ........ 73
——— *viridis* ........ 83
Tetraogallus Himalayensis ........ 70
——— thibetanus ........ 70
Tetraonidæ ........ 69
tetrax, Otis ........ 96
thibetanum, Polyplectron ........ 51
——— , Crossoptilon ........ 53
thibetanus, Tetraogallus ........ 70
——— , Syrrhaptes ........ 48
*tibetanus, Pavo* ........ 51
*Tickelli, Arboricola* ........ 79
*tigrina, Columba* ........ 34
——— , *Spilopelia* ........ 34
tigrinus, Turtur ........ 34
Tinamidæ ........ 90
torqueola, Arboricola ........ 77
*torringtoni Palumbus* ........ 26
Totanus calidris ........ 141
———canescens ........ 140
———dubius ........ 142
———fuscus ........ 141

PAGE

Totanus glareola ........................ 139
——— *glottis* ........................ 140
——— Haughtoni ........................ 142
——— hypoleucos ........................ 138
——— *ochropus* ........................ 138
——— semipalmatus ........................ 144
——— stagnatilis ........................ 140
*tranquebaricus, Turtur* ........................ 36
Treron apicauda ........................ 21
——— fulvicollis ........................ 20
——— nipalensis ........................ 15
——— *vernans* ........................ 18
TRERONIDÆ ........................ 15
Tringa *alpina* ........................ 135
——— cinclus ........................ 135
——— crassirostris ........................ 131
——— *damascensis* ........................ 131
——— *glareola* ........................ 139
——— *helvetica* ........................ 104
——— *hypoleucos* ........................ 138
——— minuta ........................ 130
——— *ochropus* ........................ 138
——— *platyrhyncha* ........................ 129
——— *pugnax* ........................ 135
——— *ruficollis* ........................ 131
——— *salina* ........................ 131
——— subarquata ........................ 133
——— subminuta ........................ 131
——— Temmincki ........................ 132
Tringoides hypoleucos ........................ 138
*Tropicoperdix chloropus* ........................ 79
Turnix albiventris ........................ 93
——— *Blanfordi* ........................ 93
——— Dussumieri ........................ 91, 92
——— joudera ........................ 91
——— *maculatus* ........................ 92
——— maculosa ........................ 92
——— ocellatus ........................ 91
——— plumbipes ........................ 91
——— pugnax ........................ 91
——— taigoor ........................ 91

PAGE

Turtur *cambayensis* ........................ 33
——— *humilior* ........................ 36
——— humilis ........................ 36
——— pulchratus ........................ 32
——— meena ........................ 32
——— risorius ........................ 35
——— *rupicolus* ........................ 32
——— senegalensis ........................ 32
——— suratensis ........................ 34
——— tigrinus ........................ 34
——— *tranquebaricus* ........................ 36
TURTURINÆ ........................ 32
tusalia, *Coccyzura* ........................ 30
———, *Macropygia* ........................ 30

Vanellus cristatus ........................ 110
vernans, *Columba* ........................ 18
———, Osmotreron ........................ 18
———, *Treron* ........................ 18
Vieilloti, Chettusia ........................ 112
———, Euplocamus ........................ 64
———, *Gallophasis* ........................ 64
Vinago sphenurus ........................ 21
*virginicus, Charadrius* ........................ 106
virgo, Anthropoides ........................ 121
viridifrons, Crocopus ........................ 17
viridis, *Columba* ........................ 18
———, *Osmotreron* ........................ 18
———, *Tetrao* ........................ 83
vulgaris, Sturnus ........................ 13
———, Francolinus ........................ 71
*vulpanser, Tadorna* ........................ 181

Wallichii, Phasianus ........................ 52

*Zaporna pygmæa* ........................ 160
*zeylonensis, Galloperdix* ........................ 269
Zeyonicus, Rallus ........................ 159

# ENGLISH INDEX.


| | PAGE |
|---|---|
| Argus Pheasant | 50 |
| Armstrong's Yellow Shank | 142 |
| Arracan Hill-Partridge | 79 |
| Ashy Turtle Dove | 32 |
| Avocet, The | 150 |
| | |
| Baillon's Crake | 160 |
| Bald Coot | 155 |
| Bamboo Partridge, Western | 81 |
| Barred Ground Dove | 38 |
| Barred-headed Goose | 174 |
| Bar-tailed Cuckoo Dove | 30 |
| Bar-tailed Godwit | 146 |
| Bengal Floriken | 190 |
| Bengal Green Pigeon | 16 |
| Bhutan Hill-Partridge | 80 |
| Black-backed Kalij | 61 |
| Black-breasted Kalij | 62 |
| ——— Rain Quail | 89 |
| Black-faced Bunting | 7 |
| Black-headed Corn Bunting | 4 |
| Black Partridge | 71 |
| Black-throated Hill-Partridge | 78 |
| Blood Pheasant | 57 |
| Blue-breasted Quail | 90 |
| Blue-winged Teal | 192 |
| Blue Wood Pigeon | 28 |
| Brahminy Duck | 179 |
| Bronze-backed Imperial Green Pigeon | 23 |
| Bronze-capped Teal | 194 |
| Brown and Ashy Crake | 162 |
| Brown-breasted Hill-Partridge | 78 |
| Bunting, The Black-faced | 7 |
| ———, The Black-headed Corn | 4 |
| ———, The Chestnut | 7 |
| ———, The Dwarf | 2 |
| ———, The Grey-headed | 3 |
| ———, The Grey-necked | 8 |
| Bunting, The Red-headed | 5 |
| ———, The White-capped | 10 |
| ———, The White-crowned | 10 |
| ———, The White-necked | 9 |
| ———, The Yellow-breasted | 6 |
| Burmo-Malayan Button Quail | 93 |
| Burmese Peafowl | 50 |
| Bush Quail, The Eastern Painted | 87 |
| ———, The Jungle | 84 |
| ———, The Painted | 87 |
| ———, The Rock | 84 |
| Bustard, The Great or European | 95 |
| ———, The Houbara | 98 |
| ———, The Indian | 97 |
| ———, The Little | 96 |
| Bustard Quail, The Indian | 91 |
| Button Quail, The Indian | 92 |
| | |
| Ceylon Jungle Fowl | 66 |
| Ceylon Spur Fowl | 69 |
| Cheer, The | 59 |
| Chestnut Bunting | 7 |
| Chinese Crimson Tragopan | 54 |
| Chukor Partridge | 74 |
| Close-barred Sand Grouse, The | 46 |
| Comb Duck, The | 175 |
| Common Crane | 120 |
| ——— Hill Partridge | 74 |
| ——— Pea Fowl | 49 |
| ——— Quail | 87 |
| ——— Sand Grouse | 44 |
| ——— Snipe | 125 |
| Coot, The Bald | 155 |
| ———, The Purple | 154 |
| Coronetted Sand Grouse, The | 40 |
| Cotton Teal | 176 |
| Crab Plover | 117 |
| Crake, Baillon's | 160 |
| ———, The Banded | 158 |

PAGE
Crake, The Brown and Ashy ......... 162
——, The Little ......... 162
——, The Malayan Banded ......... 159
——, The Ruddy ......... 161
——, The Spotted ......... 161
Crane, The Common ......... 120
——, The Demoiselle ......... 121
——, The Siberian ......... 119
——, The Sarus ......... 118
Cream-coloured Courier Plover ......... 102
Crestless Monaul ......... 54
Crimson Tragopan ......... 55
Curlew, The ......... 149
——, The Pigmy ......... 143
——, The Red-billed ......... 150
Curlew Stint, The Indian ......... 55
Cushat, The Himalayan ......... 25

Darjeeling Wood Pigeon ......... 25
Demoiselle Crane, The ......... 121
Dove, The Ashy Turtle ......... 32
——, Barred Ground ......... 38
——, The Barred-tailed Cuckoo ... 30
——, Emerald Ground ......... 37
——, Indian Ring ......... 35
——, Little Brown ......... 3
——, Malayan Spotted ......... 35
——, Red Turtle ......... 36
——, Rufous Turtle ......... 33
——, Spotted ......... 34
——, Tenasserim ......... 31
Duck, The Comb ......... 175
——, The Brahminy ......... 179
——, Pink-headed ......... 184
——, Spotted Bill ......... 184
——, The White-faced Stiff-tailed . 202
——, The White-winged Wood ... 180
Dunbird, The ......... 199
Dunlin The ......... 134
Dwarf Bunting, The ......... 2
Dwarf Goose, The ......... 174

Eared Pheasant, Hodgson's ......... 53
Eastern Bar-tailed Godwit ......... 146
Eastern Black-tailed Godwit ......... 143

PAGE
Eastern Golden Plover ......... 104
Eastern Painted Bush Quail ......... 87
Eastern Solitary Snipe ......... 123
Emerald Ground Dove ......... 37
European Golden Plover ......... 105

Ferruginous Wood Partridge ......... 82
Fire-back Pheasant, Vieillot's ...... 64
Floriken, The Bengal ......... 100
——, The Lesser ......... 101
——, The Bastard ......... 113
Francolin, The Chinese ......... 73

Gadwall, The ......... 185
Garganey Teal, The ......... 192
GEMITORES ......... 15
Godwit, The Bar-tailed ......... 146
Godwit, The Black-tailed ......... 145
——, The Snipe-billed ......... 144
Golden Eye, The ......... 201
Goosander, The ......... 205
Goose, The Barred-headed ......... 174
——, The Dwarf ......... 174
——, The Grey lag ......... 171
——, The Laughing ......... 173
——, The Pink-footed ......... 172
——, The White fronted ......... 173
Green Shanks, The ......... 140
——, The Little ......... 140
Grey-headed Bunting ......... 3
Grey-necked Bunting ......... 8
Grey Plover, The ......... 104
Grey Quail ......... 87

Hackled Ground Pigeon ......... 30
Heron, The Blue ......... 169
——, The Common ......... 169
——, The Dusky Grey ......... 168
——, The Green Slaty ......... 167
——, The Giant ......... 167
Hill Partridge, Arracan ......... 79
——, Bhutan ......... 80
——, Black-throated ...... 78
——, Brown-breasted ... 79

PAGE

Hill Partridge, Common ... 74
———— , Rufous-throated ... 80
Himalayan Snow Cock ... 70
Hodgson's Eared Pheasant ... 53
Houbara Bustard ... 98

Imperial Green Pigeon ... 22
Indian Blue Hill Pigeon ... 27
Indian Bustard ... 97
Indian Button Quail ... 91
Indian Courier Plover ... 102
Indian Crimson Tragopan ... 54
Indian Ring Dove ... 35
Indian Stock Pigeon ... 26

Jacana, The Bronze-winged ... 152
Jack Snipe, The ... 126
Jungle Bush Quail ... 84
Jungle Fowl, Grey ... 66
————, The Common ... 65

Kalij, Black-backed ... 61
—— , Black-breasted ... 62
—— , Nepaul ... 61
—— , White-crested ... 60
Kentish Plover, The ... 108
Koklass Pheasant ... 58
Kyah Partridge ... 76

Lapwing, The ... 110
————, Black-sided ... 111
————, Grey-headed ... 112
————, White-tailed ... 112
Large Sand Grouse ... 106
Large Sand Plover ... 101
Large Stone Plover ... 107
Larger Whistling Teal ... 178
Lark, The Crested ... 11
Lesser Sand Plover ... 107
Little Button Quail ... 91
Little Brown Dove ... 33
Little Indian Ringed Plover ... 109

Malayan Spotted Dove ... 35
Mallard, The ... 183

PAGE

Marbled Teal ... 186
Masked Finfoot ... 156
Megapode, The Nicobar ... 52
Merganser, The ... 205
————, The Red-breasted ... 203
Monaul, The ... 53
————, The Crestless ... 54
Moorhen ... 164
Mountain Quail ... 85
Mute Swan ... 170
Neilgherry Wood Pigeon ... 26

Nepaul Kalij ... 61
Nepaul Koklass ... 58
Nicobar Megapode ... 52
Nukhta, The ... 175

Orange-breasted Green Pigeon ... 18
Ortolan, The Rosy ... 2
Oyster Catcher, The ... 117

Pheasant, Anderson's Silver ... 64
———— , The Arracan Silver ... 63
———— , The Argus ... 50
———— , The Blood ... 57
———— , The Grey Peacock ... 51
———— , The Koklass ... 58
———— , The lineated Silver ... 62
———— , Vieillott's Fireback ... 65
Pigeon, Bengal Green ... 16
——— , Bronze-backed Imperial ... 23
——— , Darjeeling Wood ... 25
——— , Grey-fronted or Malabar Green ... 19
——— , Grey-headed Imperial ... 23
——— , Hackled Ground ... 38
——— , Imperial Green ... 22
——— , Indian Blue Rock ... 27
——— , Indian Stock ... 26
——— , Neilgherry Wood ... 26
——— , Orange-breasted Green ... 18
——— , Phayre's Green ... 19
——— , Pink-necked Green ... 18

| | PAGE |
|---|---|
| Pigeon, Pin-tailed Green | 21 |
| ———, Purple Wood | 29 |
| ———, Ruddy Green | 20 |
| ———, Southern Green | 16 |
| ———, Speckled Wood | 29 |
| ———, The Blue Hill | 28 |
| ———, The Malabar Green | 20 |
| ———, The Red Imperial | 24 |
| ———, Thick-billed Green | 15 |
| ———, Wedge-tailed Green | 21 |
| ———, Yellow-fronted Green | 17 |
| Pink-footed Goose | 172 |
| Pink-headed Duck | 184 |
| Pink-necked Green Pigeon | 18 |
| Pin-tailed Duck | 188 |
| Pin-tailed Green Pigeon | 21 |
| Pin-tailed Grouse | 45 |
| Pin-tailed Snipe | 124 |
| Plover, Crab | 117 |
| ———, Eastern Golden | 104 |
| ———, European Golden | 105 |
| ———, Kentish | 108 |
| ———, Large Sand | 106 |
| ———, Large Stone | 113 |
| ———, Lesser Ringed | 109 |
| ———, Lesser Sand | 107 |
| ———, Little Indian Ringed | 109 |
| ———, Stone | 114 |
| ———, The Cream-colored Courier. | 102 |
| ———, The Grey | 104 |
| ———, The Indian Courier | 102 |
| Pochard, The Crested | 196 |
| ———, Scaup | 198 |
| ———, Tufted | 197 |
| ———, White-eyed | 200 |
| Purple Wood Pigeon | 29 |
| Quail, Black-breasted Rain | 89 |
| ——, Blue-breasted | 90 |
| ——, Burmo-Malayan | 93 |
| ——, Common | 87 |
| ——, Common Grey | 87 |
| ——, Eastern Painted Bush | 86 |
| ——, Indian Button | 91 |
| ——, Indo-Malayan Bustard | 91 |

| | PAGE |
|---|---|
| Quail, Jungle Bush | 84 |
| ——, Little Button | 92 |
| ——, Mountain | 85 |
| ——, Nicobar Button | 93 |
| ——, Rain, The | 83 |
| ——, Red-billed | 86 |
| ——, Red-crested Wood | 83 |
| ——, Rock Bush | 84 |
| Rail, Blue-breasted | 157 |
| Red-breasted Merganser | 203 |
| Red-crested Wood Quail | 83 |
| Red-headed Bunting | 5 |
| Red Imperial Pigeon | 24 |
| Red Shank, The | 141 |
| Red Turtle Dove | 36 |
| Rock Dove | 28 |
| Ruddy Crake | 161 |
| Ruddy Green Pigeon | 20 |
| Ruddy Shieldrake | 180 |
| Ruff, The | 135 |
| Rufous Turtle Dove | 33 |
| Sanderling, The | 136 |
| Sand Grouse, Close-barred | 46 |
| ——— ———, Common | 44 |
| ——— ———, Coronetted | 40 |
| ——— ———, Large | 43 |
| ——— ———, Painted | 47 |
| ——— ———, Pin-tailed | 45 |
| ——— ———, Spotted | 41 |
| ——— ———, Thibetan | 48 |
| Sand Piper, The Broad-billed | 129 |
| ——— ———, Common | 138 |
| ——— ———, Green | 139 |
| Shieldrake, The | 181 |
| Shoveller, The | 181 |
| Siberian Crane | 119 |
| Silver Pheasant, Arracan | 63 |
| Smew, The | 205 |
| Snipe, The Common | 125 |
| ——, Eastern Solitary | 123 |
| ——, The Great | 123 |
| ——, The Jack | 126 |
| ——, The Pin-tail | 124 |

PAGE
Snipe, The Painted .................... 128
—— , The Wood .................... 122
Snow Cock, Himalayan .............. 70
——— , Thibetan ................ 70
Snow Partridge ........................ 71
Snow-wreath ............................ 119
Southern Green Pigeon .............. 16
Speckled Wood Pigeon................ 29
Spot-billed Duck ...................... 184
Spotted Dove, The...................... 34
Spur Fowl, Ceylon...................... 69
———, Painted .................... 68
———, Red ........................ 67
Starling, The ............................ 13
Stilt, The ................................ 156
Stint, Coot-footed .................... 137
—— , The Little........................ 130
—— , White-tailed .................... 132
Swan, The Mute.......................... 170

Teal, Blue-winged ...................... 192
——, Bronze-capped .................... 194
——, Clucking ............................ 193
——, Common............................ 191

PAGE
Teal, Cotton ............................ 176
——, Large Whistling .................. 177
——, Lesser Whistling.................. 176
——, Marbled ............................ 186
Thick-billed Green Pigeon .......... 15
Tragopan, The Crimson .............. 54
——— , The Indian ...................... 55
——— , Western ........................ 55
Turnstone, The .......................... 115

Watercock .................................. 165
Waterhen, White-breasted .......... 164
Whimbrel, The .......................... 148
White-breasted Kalij .................. 70
White-eyed Pochard .................... 200
Wigeon, The .............................. 190
Wood-Cock, The ........................ 122
Wood-Duck.................................. 180
Wood-Snipe, The........................ 123

Yellow-breasted Bunting.............. 6
Yellow-Shanks, Armstrong's ........ 142
——— , The Allied.......... 142

# Distribution Table of Edible and Game Birds.

| Species. | Cashmere. | Punjab. | Nepaul | N.-W. Provinces | Oudh. | Bengal. | Sind. | Rajputana. | Central India. | Central Prov. | Kutch. | Guzerat. | Concan. | Deccan. | South India. | Ceylon. | British Burmah. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Family—FRINGILLIDÆ.** | | | | | | | | | | | | | | | | | |
| **Sub-Family—EMBERIZINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Emberiza.** | | | | | | | | | | | | | | | | | |
| schœniclus, *Lin.* | ... | × | × | × | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| pusilla, *Pall.* | × | ... | ‡× | § | S | M | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | .. |
| fucata, *Pall.* | × | × | ... | × | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| melanocephala, *Scop.* | ... | × | × | × | × | .. | × | × | ... | ... | × | × | × | × | ... | ... | ... |
| luteola, *Sparrm.* | ... | × | ... | × | × | ... | × | × | × | × | × | × | × | × | × | ... | ... |
| aureola, *Pall.* | ... | ... | §× | ‡ | M. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | N× |
| rutila, *Pall.* | ... | ... | × | ‡ | B. | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | × |
| spodocephaa, *Pall.* | ... | ... | §× | B. | M. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... |
| Buchananil, *Blyth.* | ... | × | · | × | × | ... | × | ... | × | × | × | × | × | × | ... | ... | ... |
| Strachevi, *Moore* | × | × | × | × | × | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Stewarti, *Blyth.* | ... | × | ? | × | × | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| leucocephala, *Gm* | × | × | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| Gen. **Galerida** | | | | | | | | | | | | | | | | | |
| cristata, *Lin* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| **Family—STURNIDÆ.** | | | | | | | | | | | | | | | | | |
| **Sub-Family—STURNINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Sturnus.** | | | | | | | | | | | | | | | | | |
| vulgaris, *Lin.* | × | × | × | × | × | .. | × | × | × | × | × | × | × | × | × | × | ... |
| Gen. **Pastor.** | | | | | | | | | | | | | | | | | |
| roseus, *Lin.* | × | × | × | × | §× | × | × | × | × | × | × | × | × | × | × | × | ... |
| **Family—TRERONIDÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Treron.** | | | | | | | | | | | | | | | | | |
| nipalensis, *Hodgs.* | ... | ... | ... | ... | § | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| Gen. **Crocopus.** | | | | | | | | | | | | | | | | | |
| phœnicopterus, *Lath.* | .. | × | ... | × | × | ×§ | S. | × | × | × | .. | ... | * | ... | × | ... | ... |
| chlorigaster, *Blyth* | ... | .. | ... | ... | × | × | × | ... | × | × | ... | × | ... | × | ... | × | ... |
| viridifrons, *Blyth* | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | × |
| Gen. **Osmotreron.** | | | | | | | | | | | | | | | | | |
| bicincta, *Jerd.* | ... | ... | × | × | × | ×§ | S | ... | ... | × | ... | ... | * | × | ... | × | × |
| vernans, *Lin.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| malabarica, *Jerd.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | * | ... | × | .. | ... |
| Phayrii, *Blyth.* | ... | ... | ... | ... | ... | ×§ | S. | .. | ... | ... | . | . | ... | ... | ... | ... | × |
| fulvicollis, *Wagler.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | × |
| pompadoura, *Gmel.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | × | ... |
| Gen. **Sphenocercus.** | | | | | | | | | | | | | | | | | |
| sphenurus, *Vigors.* | × | × | × | × | × | § | S. | ... | ... | × | .. | .. | . | ... | ... | ... | ... |
| apicaudus, *Hodgs.* | ... | ... | ‡× | ... | ... | ×§ | ... | ... | ... | × | ... | .. | ... | ... | ... | ... | × |

* Malabar. ‡ Sikkim. § Assam. ‖ Khasia Hills.
B. Bhootan. S. Sylhet. M. Munipoor. N. Nicobars.

| Species. | Cashmere. | Punjab. | Nepaul. | N.-W. Provinces. | Oudh. | Bengal. | Sind. | Rajputana. | Central India. | Central Prov. | Kutch. | Guzerat. | Concan. | Deccan. | South India. | Ceylon. | British Burmah. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sub-Family—CARPOPHAGINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Carpophaga.** | | | | | | | | | | | | | | | | | |
| ænea, *Lin.* | ... | ... | .. | ... | ... | × | ... | ... | × | × | .. | .. | ... | ... | *× | × | A× |
| insignis, *Hodgs.* | ... | .. | ... | ‡× | ... | ‖ | ... | ... | ... | ... | ... | .. | ... | ... | *× | .. | ... |
| griseicapilla, *Wald.* | ... | ... | ... | ... | . | ... | . | | ... | ... | ... | ... | ... | .. | ... | ... | × |
| bicolor, *Scop.* | ... | ... | | . . | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | A. | N. |
| **Family—COLUMBIDÆ.** | | | | | | | | | | | | | | | | | |
| **Sub-Family—PALUMBINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. Palumbus. | | | | | | | | | | | | | | | | | |
| pulchricollis, *Hodgs.* | ... | ... | ‡× | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| casiotis, *Bonap.* | ... | × | × | × | × | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Elphinstonei, *Sykes.* | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | × | × | ... |
| Gen. **Palumbæna.** | | | | | | | | | | | | | | | | | |
| Eversmanni, *Bonap.* | ... | ... | ... | ... | ... | ... | ... | × | ... | × | ... | ... | .. | ... | ... | ... | ... |
| Gen. **Columba.** | | | | | | | | | | | | | | | | | |
| intermedia, *Strickl.* | × | × | × | × | ×§ | × | × | × | × | × | × | × | × | × | × | × | × |
| livia, *Bp.* | ... | ... | ... | ... | ... | ... | × | . | ... | ... | .. | ... | ... | ... | ... | ... | × |
| rupestris *Pall.* | ... | × | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| leuconota, *Vigors.* | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | .. | ... |
| Gen. **Alsocomus.** | | | | | | | | | | | | | | | | | |
| puniceus, *Tickell.* | ... | .. | ... | ... | ... | ×§ | ... | .. | × | ... | ... | ... | ... | ... | . | × | × |
| Hodgsoni, *Vigors.* | ... | ... | ‡× | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... |
| **Sub-Family—MACROPYGIINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Macropygia.** | | | | | | | | | | | | | | | | | |
| leptogrammica, *Tem.* | ... | ... | ‡× | ... | ... | × | B‖ | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| assimilis, *Hume* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| **Sub-Family—TURTURINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Turtur.** | | | | | | | | | | | | | | | | | |
| pulchratus, *Hodgs.* | ... | ... | ‡× | × | ... | ... | ... | ... | × | × | ... | ... | ... | ... | .. | ... | ... |
| meena, *Sykes* | ... | ... | ‡× | ... | ... | §× | ‖ | ... | ... | ... | ... | ... | × | × | × | × | × |
| senegalensis, *Lin* | ... | × | ... | × | × | ... | × | × | × | × | × | × | × | × | × | × | × |
| suratensis, *Gmel.* | ... | × | . | × | ... | × | × | × | .. | .. | × | ... | ... | ... | × | *× | ... |
| tigrinus, *Tem.* | ... | .. | .. | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| risorius, *Lin.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| humilis, *Tem.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| **Family—GOURIDÆ.** | | | | | | | | | | | | | | | | | |
| **Sub-Family—PHAPIDINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Chalcophaps.** | | | | | | | | | | | | | | | | | |
| indica, *Lin* | ... | ... | ... | ... | ... | ×§ | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | ‡× |
| Gen. **Geopelia.** | | | | | | | | | | | | | | | | | |
| striata, *Lin.* | ... | ... | ... | × | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | | ... | |

* Malabar. ‡ Sikkim. § Assam. ‖ Khasia Hills.

| Species. | Cashmere. | Punjab. | Nepaul. | N.-W. Provinces. | Oudh. | Bengal. | Sind. | Rajputana. | Central India. | Central Prov. | Kutch | Guzerat. | Concan. | Deccan | South India. | Ceylon. | British Burmah |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sub-Family—CALŒNINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Calœnas.** | | | | | | | | | | | | | | | | | |
| nicobarica, *Lin.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | N. |
| **ORDER—RASORES.** | | | | | | | | | | | | | | | | | |
| **Family—PTEROCLIDÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Pterocles.** | | | | | | | | | | | | | | | | | |
| coronatus, *Licht.* | ... | ... | ... | ... | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| senegallus, *Lin.* | ... | × | ... | ... | ... | ... | × | × | O. | ... | ... | × | ... | ... | ... | ... | ... |
| arenarius, *Pall.* | ... | × | ... | ... | ... | ... | × | × | × | × | × | × | ... | ... | ... | ... | ... |
| exustus, *Tem.* | ... | × | ... | × | × | S. | × | × | × | × | × | × | × | × | × | ... | × |
| alchata, *Lin.* | ... | × | ... | × | × | ... | × | × | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Lichtensteini, *Tem.* | ... | ... | ... | ... | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| fasciatus, *Scop.* | ... | × | | × | .. | ... | × | × | × | ... | ... | × | ... | × | .. | .. | ... |
| Gen. **Syrrhaptes.** | | | | | | | | | | | | | | | | | |
| thibetanus | P. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **Family—PHASIANIDÆ.** | | | | | | | | | | | | | | | | | |
| **Sub-Family—PAVONINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Pavo.** | | | | | | | | | | | | | | | | | |
| cristatus, *Lin.* | ... | × | ... | × | × | ×§ | × | × | × | × | × | × | × | × | × | × | × |
| muticus, *Lin.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| Gen. **Argusianus.** | | | | | | | | | | | | | | | | | |
| argus, *Lin.* | ... | ... | .. | .. | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | .. | × |
| **Family—MEGAPODIDÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Megapodius.** | | | | | | | | | | | | | | | | | |
| nicobariensis, *Blyth.* | ... | ... | ... | ... | ... | .. | ... | ... | ... | .. | ... | . | ... | ... | ... | ... | N. |
| **Sub-Family—PHASIANINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Crossoptilon.** | | | | | | | | | | | | | | | | | |
| thibetanum, *Hodgs.* | ... | ... | × | ... | ... | ... | | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. |
| Gen. **Lophophorus.** | | | | | | | | | | | | | | | | | |
| Impeyanus, *Lath.* | × | ... | ×‡ | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Sclateri, *Jerd.* | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | K |
| Gen. **Ceriornis.** | | | | | | | | | | | | | | | | | |
| satyra, *Lin.* | ... | ... | × | ... | ... | ... | ... | B. | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| melanocephalus, *Gray* | ... | × | × | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Ithaginis.** | | | | | | | | | | | | | | | | | |
| cruentus, *Hardw.* | ... | ... | × | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Pucrasia.** | | | | | | | | | | | | | | | | | |
| macrolopha, *Less.* | ... | ... | × | × | ... | ... | ... | B. | ... | ... | .. | ... | ... | ... | ... | ... | ... |
| Gen. **Phasianus.** | | | | | | | | | | | | | | | | | |
| Wallichii, *Hardw.* | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... |

B. Bhootan. S. Sylhet. M. Munipoor. N. Nicobars. P. Thibet.

| Species. | Cashmere. | Punjab. | Nepaul. | N.-W. Provinces | Oudh | Bengal. | Sind. | Rajputana. | Central India. | Central Prov. | Kutch. | Guzerat. | Concan. | Deccan. | South India. | Ceylon. | British Burmah. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gen. **Euplocamus.** | | | | | | | | | | | | | | | | | |
| alboeristatus, *Vig.* | ... | | × | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| leucomelanus, *Lath.* | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| melanonotus, *Blyth.* | ... | ... | ‡ | ... | ... | ... | ... | B. | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| horsfieldi, *G. R. Gray* | ... | ... | ... | S. | B. | ... | § | ‖ | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| lineatus, *Elliot.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| cuvieri, *Tem.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| Andersoni, *Elliot.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| Vieillotti | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| **Sub-Family—GALLINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Gallus.** | | | | | | | | | | | | | | | | | |
| ferrugineus, *Gmel.* | ... | × | ... | × | × | §× | ... | ... | ... | × | ... | ... | ... | ... | ... | ... | × |
| Stanleyi *Less.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | ... |
| Sonnerati, *Tem.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | ... | × | ... | ... | × | ... | ... |
| Gen. **Galloperdix.** | | | | | | | | | | | | | | | | | |
| spadiceus, *Gmel.* | ... | ... | × | ... | ... | ... | ... | ... | × | × | ... | × | ... | ... | ×* | ... | ... |
| lunulatus, *Valenc.* | ... | ... | ... | ... | ... | × | ... | ... | ... | × | ... | ... | ... | ... | × | ... | ... |
| zeylonensis, *Gmel.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | ... |
| **Family—TETRAONIDÆ.** | | | | | | | | | | | | | | | | | |
| **Sub-Family—PERDICINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Tetraogallus.** | | | | | | | | | | | | | | | | | |
| himalayensis, *G. R. Gray* | ... | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| thibetanus, *Gould* | ... | ... | ... | × | L. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Lerwa.** | | | | | | | | | | | | | | | | | |
| nivicola, *Hodgs* | × | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Francolinus.** | | | | | | | | | | | | | | | | | |
| vulgaris, *Steph.* | ... | × | ... | × | ... | × | × | × | × | S. | × | × | ... | ... | ... | ... | ... |
| pictus, *Jard. & Selby* | ... | ... | ... | ... | ... | ... | ... | ... | × | × | ... | × | ... | ... | × | ... | ... |
| chinensis, *Osb.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| Gen. **Caccabis.** | | | | | | | | | | | | | | | | | |
| chukor, *Gray.* | ... | × | × | × | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Ammoperdix.** | | | | | | | | | | | | | | | | | |
| bonhami, *Gray* | ... | × | ... | × | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Ortygornis.** | | | | | | | | | | | | | | | | | |
| ponticeriana, *Gmel.* | ... | × | ... | × | ... | ... | × | × | ... | ... | × | × | × | × | × | × | ... |
| gularis, *Temm.* | ... | ... | ... | × | × | ×§ | S. | ... | × | × | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Arboricola.** | | | | | | | | | | | | | | | | | |
| torqueola, *Valenc.* | ... | × | ... | × | ‡ | B. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| atrogularis, *Blyth.* | ... | ... | ... | ... | ... | §S | Ch | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| brunneipectus, *Tickell* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| chloropus, *Tickell.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| intermedia, *Blyth.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | AH | ... | ... |
| rufogularis, *Blyth.* | ... | ... | ... | × | ... | § | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| Mandelli, *Hume.* | ... | ... | ... | ... | ... | B. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Bambusicola.** | | | | | | | | | | | | | | | | | |
| Fytchii, *Anderson* | ... | ... | ... | ... | ... | § | V. | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |

* Malabar. ‡ Sikkim. § Assam. ‖ Khasia Hills. L. Ladak.

| Species. | Cashmere. | Punjab. | Nepaul. | N.-W. Provinces | Oudh. | Bengal. | Sind | Rajputana. | Central India. | Central Prov. | Kutch, | Guzerat. | Concan. | Deccan. | South India. | Cey'on. | British Burmah. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gen. **Caloperdix.** | | | | | | | | | | | | | | | | | |
| oculea, *Temm.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| Gen. **Rollulus.** | | | | | | | | | | | | | | | | | |
| roulroul, *Scop.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| Gen. **Perdicula.** | | | | | | | | | | | | | | | | | |
| asiatica, *Latham* | × | × | ... | × | ... | ... | ... | ... | × | × | ... | × | × | × | × | *× | ... |
| argoondah, *Skyes* | ... | × | ... | × | × | ... | ... | × | × | × | × | × | × | × | × | ... | ... |
| Gen. **Ophrysia.** | | | | | | | | | | | | | | | | | |
| superciliosa, *J. E. Gray* | ... | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Microperdix.** | | | | | | | | | | | | | | | | | |
| erythrorhyncha, *Sykes* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | × | ... | ... |
| Blewitti, *Hume* | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | ... | ... | ... | ... | ... | ... | ... |
| **Sub-Family**—COTURNICINÆ. | | | | | | | | | | | | | | | | | |
| Gen. **Coturnix.** | | | | | | | | | | | | | | | | | |
| communis, *Linn.* | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| coromandelica. *Gmel.* | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| Gen. **Excalfactoria.** | | | | | | | | | | | | | | | | | |
| chinensis, *Linn.* | ... | ... | ‡ | ... | ... | § | ‖ | ... | × | × | ... | ... | ... | ... | × | × | × |
| **Family**—TINAMIDÆ. | | | | | | | | | | | | | | | | | |
| Gen. **Turnix.** | | | | | | | | | | | | | | | | | |
| plumbipes, *Hodgs.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | × | × |
| joudera, *Hodgs.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | ... |
| Dussumieri, *Temm.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | ... |
| maculosa, *Temm.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| albiventris, *Hume.* | ... | ... | ... | ... | ... | N. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| **ORDER**—GRALLATORES. | | | | | | | | | | | | | | | | | |
| **Tribe**—PRESSIROSTRES. | | | | | | | | | | | | | | | | | |
| **Family**—OTITIDÆ. | | | | | | | | | | | | | | | | | |
| Gen. **Otis.** | | | | | | | | | | | | | | | | | |
| tarda, *Linn.* | Hastnagur | | | | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| tetrax, *Linn.* | ... | × | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Eupodotis.** | | | | | | | | | | | | | | | | | |
| Edwardsi, *Gray.* | ... | × | ... | × | × | ... | × | × | ... | × | × | × | ... | × | ... | ... | ... |
| Gen. **Houbara.** | | | | | | | | | | | | | | | | | |
| Macqueenii, *Gray.* | ... | × | ... | × | × | ... | × | × | ... | × | × | × | ... | × | ... | ... | ... |
| Gen. **Sypheotides.** | | | | | | | | | | | | | | | | | |
| bengalensis, *Gmel.* | ... | × | ... | × | × | × | ... | ? | Sy | § | ... | ... | ... | ... | ... | ... | ... |
| auritus, *Lath.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | ... | ... |
| **Family**—CURSORIDÆ. | | | | | | | | | | | | | | | | | |
| Gen. **Cursorius.** | | | | | | | | | | | | | | | | | |
| coromandelicus, *Gmel.* | ... | × | ... | × | × | × | × | × | ... | ? | × | × | × | × | × | ... | ... |
| gallicus, *Gmel.* | ... | × | ... | × | × | ... | × | × | ... | ... | × | × | ... | ... | ... | ... | ... |

B. Bhootan. S. Sylhet. M. Munipoor N. Nicobars.

| Species. | Cashmere. | Punjab. | Nepaul. | N.-W. Provinces | Oudh. | Bengal. | Sind. | Rajputana. | Central India. | Central Prov. | Kutch. | Guzerat. | Concan. | Deccan. | South India. | Ceylon. | British Burmah |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sub-Family—CHARADRINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Squatarola.** | | | | | | | | | | | | | | | | | |
| helvetica, *Linn.* | ... | ... | ... | ... | ... | × | × | ... | ... | ... | × | × | × | ... | × | × | × |
| Gen. **Charadrius.** | | | | | | | | | | | | | | | | | |
| fulvus, *Gm.* | ... | × | ... | × | ... | ... | × | ... | ... | ... | × | × | × | × | × | × | × |
| pluvialis, *Linn.* | ... | × | ... | ... | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | × | ... |
| Gen. **Ægialitis.** | | | | | | | | | | | | | | | | | |
| Geoffroyi, *Wagl.* | ... | ... | ... | ... | ... | × | × | × | ... | ... | × | × | × | .. | × | × | × |
| mongolica, *Pall.* | ... | ... | ... | ... | ... | × | × | ... | ... | ... | × | × | × | ... | × | × | × |
| cantiana, *Lath.* | ... | × | ... | × | × | × | × | × | ... | ... | × | × | × | ... | × | × | × |
| dubia, *Scop.* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| Jerdoni, *Legge.* | ... | ... | ... | ... | ... | × | × | .. | ... | ... | × | × | ... | ... | ? | × | × |
| **Sub-Family—VANELLINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Vanellus.** | | | | | | | | | | | | | | | | | |
| cristatus, *Meyer.* | × | × | × | × | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Chettusia.** | | | | | | | | | | | | | | | | | |
| gregaria, *Pallas.* | . | × | ... | × | × | ... | × | × | × | ... | × | ... | × | × | ... | ... | ... |
| leucura, *Licht.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | ... | ... | ... |
| cinerea, *Blyth.* | ... | × | ... | × | × | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| **Sub-Family—ÆSACINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Æsacus.** | | | | | | | | | | | | | | | | | |
| recurvirostris, *Cuv* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| Gen. **Œdicnemus.** | | | | | | | | | | | | | | | | | |
| crepitans, *Temm.* | .. | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| **Family—HÆMATOPODIDÆ.** | | | | | | | | | | | | | | | | | |
| **Sub-Family—STREPSILINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Strepsilas.** | | | | | | | | | | | | | | | | | |
| interpres, *Linn.* | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | ... |
| Gen. **Dromas.** | | | | | | | | | | | | | | | | | |
| ardeola, *Paykul* | ... | ... | ... | ... | ... | ... | × | ... | ... | ... | × | × | × | ... | × | × | ... |
| Gen. **Hæmatopus.** | | | | | | | | | | | | | | | | | |
| ostralegus, *Linn* | ... | ... | ... | ... | ... | × | × | ... | ... | ... | × | ... | × | ... | × | × | ... |
| **Family—GRUIDÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Grus.** | | | | | | | | | | | | | | | | | |
| antigone, *Linn.* | ... | × | .. | × | × | × | × | × | × | ... | × | × | × | × | × | ... | × |
| leucogeranus, *Pall.* | ... | × | ... | × | × | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| cinerea, *Bechst,* | ... | × | ... | × | × | × | × | × | × | ... | × | × | × | × | × | ... | ... |
| Gen. **Anthropoides.** | | | | | | | | | | | | | | | | | |
| virgo, *Linn.* | ... | × | ... | × | × | §? | × | × | × | ... | × | × | × | × | × | ... | ... |

* Malabar ‡ Sikkim. § Assam. ‖ Khasia Hills.

| Speices. | Cashmere. | Punjab. | Nepaul. | N.-W. Provinces. | Oudh. | Bengal. | Sind. | Rajputana. | Central India. | Central Prov. | Kutch. | Guzerat. | Concan. | Deccan. | South India. | Ceylon. | British Burmah. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Tribe—LONGIROSTRES.** | | | | | | | | | | | | | | | | | |
| **Family—SCOLOPACIDÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Scolapax.** | | | | | | | | | | | | | | | | | |
| rusticola, *Linn.* | × | × | × | × | × | × | × | S. | ... | ... | . | ... | × | ... | × | × | × |
| Gen. **Gallinago.** | | | | | | | | | | | | | | | | | |
| nemoricola, *Hodgs.* | × | × | × | × | ? | ... | × | ... | ... | ... | ... | ... | ... | ... | × | × | × |
| solitaria, *Hodgs.* | × | × | × | × | ? | B. | ... | ... | ... | ... | .. | .. | ... | ... | ... | × | A N |
| stenura, *Kuhl.* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| scolopacina, *Bonap.* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| gallinula, *Linn.* | ? | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| Gen. **Rhynchæa,** *Cuv.* | | | | | | | | | | | | | | | | | |
| capensis, *Linn.* | .. | × | ... | ... | × | ? | × | × | × | × | × | × | × | × | × | × | × |
| Gen. **Limicola.** | | | | | | | | | | | | | | | | | |
| platyrhyncha, *Temm.* | ... | ... | ... | ... | ... | × | × | ... | ... | ... | × | .. | × | ... | × | × | × |
| **Sub-Family—TRINGINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Eurynorhynchus.** | | | | | | | | | | | | | | | | | |
| pygmæus, *Linn.* | ... | ... | ... | .. | ... | × | ... | .. | .. | ... | ... | ... | ... | ... | ... | × | × |
| Gen. **Tringa.** | | | | | | | | | | | | | | | | | |
| minuta, *Leisl* | ... | × | ... | × | × | × | × | × | ... | ... | × | × | × | × | × | × | × |
| sub-minuta, *Midd.* | ... | ... | ... | ... | ... | × | × | ... | ... | .. | × | ... | × | × | × | × | × |
| Temmincki, *Leisler.* | ... | ... | ... | .. | .. | × | × | × | ... | . | × | ... | × | × | × | × | × |
| crassirostris, *Temm* | ... | . | . | .. | ... | ... | × | × | ... | ... | × | . | ... | .. | .. | .. | A× |
| subarquata, *Gould.* | × | × | ... | . | .. | × | × | × | .. | ... | × | . | × | ... | ... | × | ... |
| cinclus, *Linn.* | ... | × | ... | × | × | × | × | × | ... | ... | × | × | ? | .. | × | ... | × |
| Gen. **Machetes.** | | | | | | | | | | | | | | | | | |
| pugnax, *Linn.* | ... | × | | × | × | × | × | ? | ... | ... | × | × | × | × | × | × | × |
| Gen. **Calidris.** | | | | | | | | | | | | | | | | | |
| arenaria, *Lin.* | ... | .. | ... | ... | ... | ... | × | × | ... | ... | × | × | × | ... | × | × | × |
| **Sub-Family—PHALAROPINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Phalaropus.** | | | | | | | | | | | | | | | | | |
| hyperboreus, *Linn.* | .. | ... | ... | .. | ... | . | × | .. | ... | ... | . | ... | ... | ... | ... | × | ... |
| fulicarius, *Linn.* | ... | ... | .. | .. | ... | × | ... | .. | ... | ... | ... | ... | ... | .. | .. | × | ... |
| **Sub-Family—TOTANINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Actitis.** | | | | | | | | | | | | | | | | | |
| hypoleucos, *Linn.* | × | × | × | × | × | × | × | × | × | ... | ... | × | × | × | × | ... | × |
| ochropus, *Linn.* | .. | × | × | × | × | × | × | × | × | ... | .. | × | × | × | × | × | ... |
| Gen. **Totanus.** | | | | | | | | | | | | | | | | | |
| glareola, *Gm* | ... | × | × | × | × | × | × | × | × | ... | .. | × | × | × | × | × | × |
| canescens, *Gmel.* | ... | × | × | × | × | × | × | × | × | ... | ... | × | × | × | × | × | × |
| stagnatilis, *Bechst.* | ... | × | × | × | × | × | × | × | × | ... | ... | × | × | × | × | × | × |
| calidris, *Linn.* | ... | × | × | × | × | × | × | × | × | ... | ... | × | × | × | × | × | × |
| fuscus, *Linn.* | .. | × | × | × | × | × | × | × | × | ... | ... | × | × | × | × | × | × |
| Haughtoni, *Hume* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | .. | ... | × |
| dubius, *Murray.* | ... | ... | ... | ... | ... | ... | × | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... |

B. Bhootan. S. Sylhet. M. Munipoor. N. Nicobars.

| Species. | Cashmere. | Punjab. | Nepaul. | N.-W. Provinces. | Oudh. | Bengal. | Sind. | Rajputana. | Central India. | Central Prov. | Kutch. | Guzerat. | Concan. | Deccan. | South India. | Ceylon. | British Burmah. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gen. **Terekia.** | | | | | | | | | | | | | | | | | |
| cinerea, *Guldenst* | .. | ... | ... | × | .. | × | × | ... | ... | ... | × | × | × | × | × | × | × |
| **Sub-Family—LIMOSINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Pseudoscolopax.** | | | | | | | | | | | | | | | | | |
| semipalmatus, *Jerd.* | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | × |
| Gen. **Limosa.** | | | | | | | | | | | | | | | | | |
| ægocephala, *Linn.* | ... | ... | ... | ... | ... | ... | × | × | ... | ... | × | × | × | × | × | × | ... |
| lapponica, *Linn.* | ... | ... | ... | ... | ... | ... | × | × | ... | ... | × | × | × | × | × | × | ... |
| **Sub-Family—NUMENINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Numenius.** | | | | | | | | | | | | | | | | | |
| phæopus, *Linn.* | ... | × | ... | ... | ... | ... | × | . | ... | .. | × | ... | × | ... | × | × | × |
| arquatus, *Linn.* | ... | × | ... | ... | ... | ... | × | ... | ... | ... | × | × | × | ... | × | × | × |
| Gen. **Ibidorhynchus.** | | | | | | | | | | | | | | | | | |
| Struthersii, *Vigors.* | ... | ... | ... | L | ... | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | .. | ... |
| **Sub-Family—RECURVIROSTRINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Recurvirostra.** | | | | | | | | | | | | | | | | | |
| avocetta, *Linn.* | ... | × | ... | × | × | × | × | × | ... | ... | × | × | × | × | × | × | × |
| Gen. **Himantopus.** | | | | | | | | | | | | | | | | | |
| candidus, *Linn.* | × | × | × | × | × | × | ... | × | × | × | × | × | × | × | × | × | × |
| **Family—PARRIDÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Metopodius.** | | | | | | | | | | | | | | | | | |
| indicus, *Lath.* | ... | ... | .. | ... | ... | × | ... | ... | × | ... | × | × | × | × | × | .. | × |
| **Sub-Family—PARRINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Hydrophasianus.** | | | | | | | | | | | | | | | | | |
| chirurgus, *Scop.* | ... | × | ... | × | × | × | × | × | × | × | × | ... | ... | ... | × | ... | B |
| Gen. **Porphyrio.** | | | | | | | | | | | | | | | | | |
| poliocephalus, *Lath.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| Gen. **Fulica.** | | | | | | | | | | | | | | | | | |
| atra, *Linn.* | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × | .. | × |
| Gen. **Podica.** | | | | | | | | | | | | | | | | | |
| personata, G. *R. Gray* | ... | .. | ... | ... | ... | ... | ... | § | ... | . | ... | ... | ... | ... | ... | ... | × |
| Gen. **Hypotænidia.** | | | | | | | | | | | | | | | | | |
| striata, *Linn.* | ... | .. | ... | ... | § | × | ... | syl. | .. | A H | ... | ... | × | ... | × | × | × |
| Gen. **Rallus.** | | | | | | | | | | | | | | | | | |
| indicus, *Blyth.* | ... | ... | × | × | × | × | A H | ... | × | ... | .. | ... | ... | ... | × | ... | ... |

* Malabar. ‡ Sikkim. § Assam. ‖ Khasia Hills. L. Ladak.

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Gen. Rallina. | | | | | | | | | | | | | | | | | |
| euryzonoides, *Lafresn.* | ... | × | ×‡ | B × | × | × | ... | ... | ... | ... | ... | ... | ... | ... | × | × | × |
| fasciata, *Raffl.* | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | × | × |
| Canningi, *Tytler.* | ... | ... | ... | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | A |
| **Sub-Family—RALLINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. Porzana. | | | | | | | | | | | | | | | | | |
| Bailloni, *Viell.* | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| maruetta, *Linn.* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | .. | ... |
| fusca, *Linn.* | × | × | ... | × | ... | × | ... | × | × | .. | A H | ... | . . | ... | × | × | × |
| minuta, *Pall.* | × | ... | ... | .. | ... | .. | × | ... | ... | ... | ... | ... | ... | ... | .. | ... | ... |
| akool, *Sykes.* | ... | × | × | × | × | × | ... | × | × | × | ... | × | ... | .. | ... | ... | ... |
| Gen. Gallinula. | | | | | | | | | | | | | | | | | |
| chloropus, *Linn.* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| phœnicura, *Penn.* | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| Gen. Gallicrex. | | | | | | | | | | | | | | | | | |
| cinereus, *Gm.* | ... | . | ... | .. | ... | × | × | ... | × | × | ... | ... | ... | ... | × | × | × |
| **Family—ARDEIDÆ.** | | | | | | | | | | | | | | | | | |
| Gen. Ardea. | | | | | | | | | | | | | | | | | |
| goliath, *Tem.* | ... | ... | .. | ... | ... | × | H | ... | .. | ... | ... | ... | ... | ... | ... | ... | ... |
| sumatrana, *Raffles.* | ... | ... | ... | ... | ... | ... | A H | ... | ... | ... | ... | ... | ... | . | ... | ... | × |
| insignis, *Hodgs.* | ... | . | ‡ | § | ... | × | A H | ... | .. | ... | ... | ... | ... | . | ... | ... | × |
| cinerea, *Linn.* | ? | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| purpurea, *Linn.* | ? | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| **Family—CYGNIDÆ.** | | | | | | | | | | | | | | | | | |
| Gen. Cygnus. | | | | | | | | | | | | | | | | | |
| olor, *Gm.* | ... | × | ... | .. | ... | ... | × | ... | ... | .. | ... | ... | ... | ... | ... | ... | ... |
| **Family—ANSERIDÆ.** | | | | | | | | | | | | | | | | | |
| **Sub-Family—ANSERINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. Anser. | | | | | | | | | | | | | | | | | |
| cinereus, *Meyer.* | ... | × | × | × | × | × | × | ... | ... | ... | × | × | ... | ... | ... | ... | ... |
| brachyrrhynchus, *Baillon.* | ... | × | ... | ... | ... | § | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| albifrons, *Gm.* | × | × | × | × | × | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| erythropus, *Linn.* | ... | ... | ... | × | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| indicus, *Lath.* | ... | × | ... | × | × | × | × | ... | ... | × | ... | ... | ... | ... | . | ... | ... |

A. Andamans. B. Bhootan. S. Sylhet. M. Munipoor. N. Nicobars.

| Species. | Cashmere | Punjab. | Nepaul. | N.-W. Provinces. | Oudh. | Bengal. | Sind. | Rajputana. | Central India. | Central Prov. | Kutch. | Guzerat. | Concan. | Deccan. | South India. | Ceylon. | British Burmah. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Family—ANATIDÆ.** | | | | | | | | | | | | | | | | | |
| **Sub-Family—PLECTOPTERINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Sarkidiornis.** | | | | | | | | | | | | | | | | | |
| melanonotus, *Penn.* | ... | × | ... | × | × | × | × | × | ... | ... | × | × | × | × | × | × | × |
| Gen. **Nettapus.** | | | | | | | | | | | | | | | | | |
| coromandelianus, *Gmel* | .. | × | .. | × | × | × | ... | ... | ... | ... | .. | × | × | × | × | × | × |
| **Sub-Family—TADORNINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Dendrocygna.** | | | | | | | | | | | | | | | | | |
| javanica, *Horsf.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| fulva, *Gmel.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| Gen. **Casarca.** | | | | | | | | | | | | | | | | | |
| rutila, *Pall.* | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| scutulata, *P. L S. Mull.* | ... | ... | ... | ... | . | × | §§ | ... | ... | ... | ... | ... | ... | ... | ... | ... | × |
| Gen. **Tadorna.** | | | | | | | | | | | | | | | | | |
| cornuta, *Gmel.* | .. | × | .. | × | × | × | × | ... | ... | ... | × | | ... | ... | ... | ... | ... |
| **Sub-Family—ANATINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Spatula.** | | | | | | | | | | | | | | | | | |
| clypeata, *Linn.* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| Gen. **Anas.** | | | | | | | | | | | | | | | | | |
| boscas, *Linn.* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | . | .. |
| pæcilorhyncha, *Forst.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| caryophyllacea, *Lath.* | ... | ... | ... | . | ... | .. | . | § | A \|\| | ... | ... | ... | .. | ... | | . | ... |
| Gen. **Chaulelasmus.** | | | | | | | | | | | | | | | | | |
| streperus, *Linn.* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| rufiventris, *sp. nov.* | ... | ... | ... | ... | .. | ... | × | Sy | ... | ... | ... | ... | ... | ... | ... | .. | ... |
| angustirostris, *Menet.* | ... | × | ... | × | × | × | × | ... | ... | ... | ... | ... | .. | ... | ... | ... | .. |
| Gen. **Dafila.** | | | | | | | | | | | | | | | | | |
| acuta *Linn.* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| Gen. **Mareca.** | | | | | | | | | | | | | | | | | |
| penelope, *Linn.* | ... | × | ... | × | × | × | × | × | × | .. | × | × | × | × | × | ... | × |
| Gen. **Querquedula.** | | | | | | | | | | | | | | | | | |
| crecca, *Linn.* | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| circia, *Linn.* | ... | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × | × |
| formosa, *Georgi* | ... | ... | ... | × | × | × | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| falcata, *Georgi.* | ... | ... | × | × | × | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

* Malabar. ‡ Sikkim. § Assam. || Khasia Hills. Sy. Sylhet.

| Species. | Cashmere. | Punjab. | Nepaul. | N.-W. Provnces | Oudh. | Bengal. | Sind. | Rajputana | Central India. | Central Prov. | Kutch. | Guzerat. | Concan. | Deccan. | South India | Ceylon. | British Burmah. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sub-Family—FULIGULINÆ.** | | | | | | | | | | | | | | | | | |
| Gen. **Fuligula.** | | | | | | | | | | | | | | | | | |
| rufina, *Pall.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | ... | ... | ... |
| cristata, *Linn.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | ... | ... | ... |
| marila, *Linn.* | × | ... | × | ... | ... | ... | × | ... | ... | ... | ... | ... | . | ... | ... | ... | ... |
| ferina, *Linn.* | ... | × | ... | × | × | × | × | × | × | × | × | × | × | × | × | ... | ... |
| nyroca, *Gould.* | × | × | × | × | × | × | × | × | × | × | × | × | × | × | ... | ... | ... |
| Gen. **Clangula.** | | | | | | | | | | | | | | | | | |
| glaucion, *Linn.* | ... | ... | ... | × | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Erismatura.** | | | | | | | | | | | | | | | | | |
| leucocephala, *Scop.* | ... | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Mergus.** | | | | | | | | | | | | | | | | | |
| serrator, *Linn.* | ... | ... | ... | ... | ... | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| merganser, *Linn.* | ... | × | ... | × | ... | × | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| Gen. **Mergellus.** | | | | | | | | | | | | | | | | | |
| albellus, *Linn.* | ... | × | ... | × | × | ... | × | ... | ... | ... | ... | ... | ... | ... | ... | ... | ... |

B. Bhootan. S. Sylhet. M. Munipoor. N. Nicobars.